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The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

MARCH 12, 1934
ume 72 Number 13

Creating

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G-E explosion-proof, oil-immersed magnetic starter

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VOLUME 72, No. 13

MARCH 12, 1934

THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

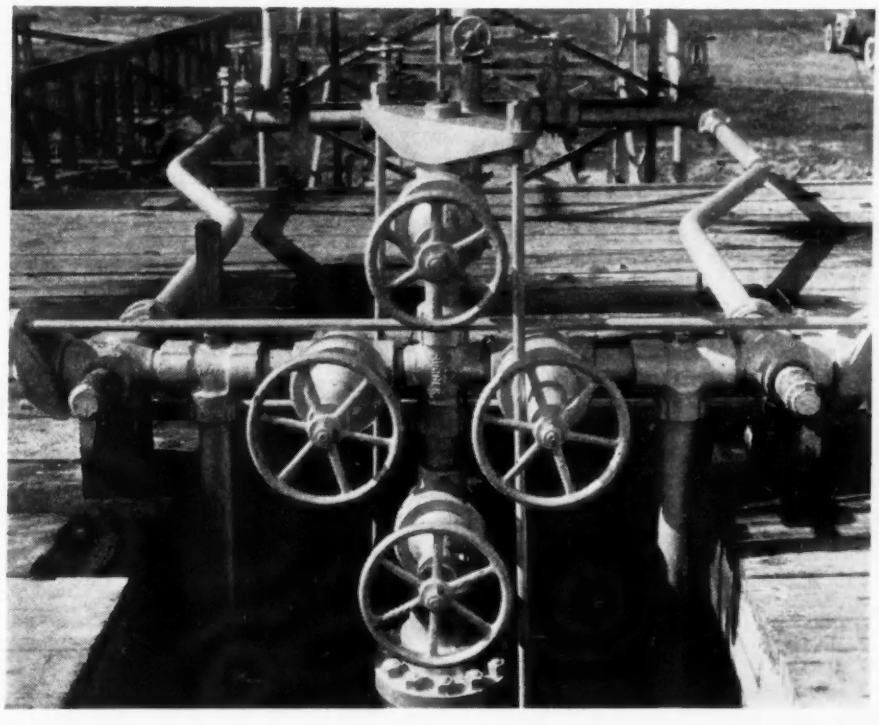
The Changing Panorama

Gasoline Is Cheap

Congressional hearts, dilated by the stimulation of professional propagandists, are again bleeding for the poor public that buys gasoline. Much is made over the allegation that increased prices of the oil industry are out of proportion to increased costs brought about by higher wages paid under NRA regulations. Horror is expressed that there are differences in the price of gasoline as between sections. No mention is made of the fact that much of the cost of all gasoline is tax imposed by the same group that now cries about the cost.

How anyone, politician or propagandist, can estimate increased costs of a product incidental to the code is a question hard to answer. Estimating wage increases when statistics both on numbers of workers and pay scales before and after all are lacking, is a big problem. Contributing and associated industries also have increased their costs. Much of the added cost of gasoline has gone to the producer of the oil, the land and royalty owner. And in no instance has the advance in price been enough to even approximate the tax that governmental agencies impose.

Further, the oil industry contributes enough to the general welfare that it and its investors are entitled to its margin of profit. Oil followed the world into the depression, took its losses with the best of them, and now stands in the front rank of industries on the up-



Handling High Pressures In Louisiana Coast Area

Upper portion of a Christmas tree on a completed well in the Iowa field, with lower portion, down in cellar, not in view.

grade. No commodity is sold at a price more commensurate with value, and only the uninformed or those who deliberately are misinformed can make any criticism of the industry's rate of return.

Curtail Wildcats?

Wildcat or not to wildcat? One side of that question was discussed ably in these pages last week, and currently we have the other angle. On one side it is argued that owners of present wells should be permitted to get their return now and more quickly than is possible with curtailed flow; and exploration should halt because continued discoveries aggravate and prolong the need for proration. The other side shows that even the vast amounts of oil now in sight are supplies for only a few brief years unless additional reserves are uncovered. The two discussions here referred to tend to the academic. The more practical argument is that those of the industry who concern themselves with being in business some years in the future are not inclined to rest their oars in the current flood of oil, but are expending effort and money freely in seeking out and acquiring reserves. They hold that profits deferred may be even more desirable than more profits now. And there is some profit from the knowledge of having something laid away for old age.

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The Oil Man's Calendar

MARCH

12-14 *Michigan Oil Men's Association, Detroit, Michigan.*

22-24 *American Association of Petroleum Geologists, Dallas, Texas.*

APRIL

4 *A.P.I. Division of Production, California District, Los Angeles.*

6-7 *A.P.I. Division of Production, Eastern District, State College, Pennsylvania.*

16-21 *Oil Equipment & Engineering Exposition, Houston, Texas.*

19-20 *National Petroleum Association, Cleveland, Ohio.*

MAY

3-5 *American Chemical Society (Regional), Kansas City, Missouri.*

9-11 *Natural Gasoline Association of America, Tulsa, Oklahoma.*

12-19 *International Petroleum Exposition, Tulsa, Oklahoma.*

14-17 *Petroleum Division, American Society of Mechanical Engineers, Annual Meeting, Tulsa, Oklahoma.*

16 *Mid-Continent Oil & Gas Association (Annual), Tulsa, Oklahoma.*

21-22 *National Oil Scouts Association, Lake Charles, Louisiana.*

22-24 *American Petroleum Institute, Mid-Year Meeting, Pittsburgh, Pennsylvania.*

JUNE

25-29 *American Society of Mechanical Engineers, Denver, Colorado.*

14-15 *Pennsylvania Grade Crude Oil Association, State College, Pennsylvania.*

SEPTEMBER

10-14 *American Chemical Society, Cleveland, Ohio.*

19-21 *National Petroleum Association, Atlantic City, New Jersey.*

NOVEMBER

12-15 *American Petroleum Institute, Fifteenth Annual Meeting, Dallas, Texas.*

OCTOBER

29 *American Gas Association, Atlantic City, New Jersey.*

Petroleum Demand Higher

Evidence of increased demand for petroleum and petroleum products featured the Bureau of Mines' monthly report covering January. Total demand for crude oil was 83,531,000 barrels during January, compared with 83,082,000 barrels the previous month and 75,199,000 barrels in January of 1933.

Similarly, the domestic demand for motor fuel, principal refined product and chief revenue source of the industry, was up to 29,519,000 barrels in January, 1934, from 28,787,000 barrels in December and 26,510,000 barrels in January, 1933.

Although stocks of crude oil were reduced to 353,642,000 barrels by January 31, from 354,305,000 barrels a month earlier, such reduction was due not so much to slightly lower crude oil production as to a material rise in refinery operations. Crude runs to stills jumped to 71,512,000 barrels in January from 70,440,000 barrels in December, whereas runs in January, 1933, had been only 66,093,000 barrels. Daily output of motor fuel was 32,000 barrels per day higher in January than in December.

January crude oil production was 71,976,000 barrels, compared with 72,060,000 barrels in December and 63,998,000 barrels in January, 1933.

Another Step Forward

Another step toward control of oil production was taken Friday when Governor Ferguson of Texas approved the three bills passed by the legislature to strengthen the state commission. Next procedure, of course, will be court attack upon the refinery control bill. The same group in East Texas that has fought every move will have their "rights curtailed" by this measure. Concerns not running "hot" oil will be annoyed by the clerical work, but honest citizens do not seek injunctions to keep the cops out of their alleys.

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Today's Picture In Oil

Marketing agreements offer hope, although code legality and "hot" oil cause anxiety. Oil prices much improved under recovery program, but petroleum products still cheapest in general use.

By JACK LOGAN

PROMINENT in the current picture in oil are the brighter hues lent by prospective gasoline price stabilization, although discerning eyes cannot fail to note the splotches made of "hot" oil and the shadows cast by hitherto successful court attacks against the petroleum code and the oil administrator's regulations.

Agreements

For the petroleum industry to prosper there must be, above all other things, stabilization of prices for gasoline, principal revenue-raising product of the industry. Such stabilization can be achieved, it is hoped, through the petroleum agency (gasoline pooling) and marketing agreements. After several months of delay the zero hour for inauguration of these agreements is apparently at hand; required approval by 85 percent of the industry having been obtained, while the immediate future is expected to bring final government approval and perfection of organization for putting the agreements into effect.

Agency

The petroleum agency agreement provides for creation of an association of all signatories to "purchase, hold and in an orderly way dispose of surplus gasoline that threatens the stability of the oil price structure, in an effort to bring the prices of gasoline into proper relationship with the present price of crude oil and to maintain and support such relationship." The association is to be known as the National Petroleum Agency.

Those signing the agreement bind themselves not to purchase illegally produced oil or the products thereof, to assist the planning and coordination committee, and to cooperate in obtaining and allocating supplies of crude oil for refiners without adequate supplies to meet their reasonable and proper requirements.

Control and management of the association will be in a board of governors consisting of one governor nominated by each member. At its first meeting, March 2, the board elected from its membership an executive committee of five that will act for the board when the latter is not in session. It was expected following the above meeting that the agency organization would be completed shortly, and that another board meeting would then bring definite action in the contemplated program.

The petroleum administrator may attend meetings of the board and executive committee and will have access to books and records of the agency.

The marketing agreement is designed to equalize the price structure and to guarantee proper margins for distributors, jobbers, and retailers. It is to be self-executing and does not require such an agency as that described above.

Hesitation

The petroleum agency and marketing agreements are based on authority given in the National Industrial Recovery Act, and so are designed to last until June, 1935.

This circumstance, incidentally, was partially responsible for delay in obtaining necessary signatures to the agreements to make them effective, some companies having hesitated to affix signatures when legality of the oil industry's code and recovery program under the NIRA became doubtful a few weeks ago with rendering of a federal district court opinion in East Texas holding provisions of the code and regulations of the oil administrator invalid as applied to producers, refiners, and pipe line concerns not signatories to the code and doing only intrastate business. (The opinion in fact expressed misgivings as to the constitutionality of the National Industrial Recovery Act itself.)

As if suspicious of houses that may not have been built upon stone, some of those who hesitated to sign the agency and marketing agreements were disposed to await the results of the anticipated speedy review of the East Texas code cases by the United States Supreme Court, to which they have been appealed.

When the high court passes upon those cases there should be clearer conception of the lengths to which the federal government and industry can lawfully go in recovery efforts, it was reasoned, apparently; and thus an expression from the court would tend to throw light on validity and possible effectiveness of the pooling and marketing agreements, as well as on the various other phases of the recovery program as undertaken by the petroleum industry.

Effect

While the indirect effects of the Supreme Court ruling on the oil code cases will be important and far-reaching, affecting not only the whole petroleum industry but most other United States industries as well, the immediate effect will be in regard to "hot" oil production.

If the East Texas decision is reversed, the code and the oil administrator's regulations will be upheld and the federal government can resume its efforts to stamp out "hot" or illegal crude oil production. If the decision is affirmed

"hot" oil, eating at crude and refined oil price structures and threatening the stability of the industry, will likely continue an unsolved problem.

Prohibition

If the state governments could effectively carry out their programs of conservation there would of course be no great necessity for the federal help on "hot" oil prohibition. But the air-tight enforcement by state agents is not being achieved.

Particularly is this true in Texas, due to the great difficulty of successfully regulating the vast East Texas field, with its many wells, many refineries, many pipe lines, and many companies and operators. Latest reports from the field indicate "hot" oil production still on the increase, although already amounting to about 75,000 barrels daily, the field's actual output being therefore in excess of 500,000 barrels daily while the allowable is about 431,000 barrels daily.

Despite

This large quantity of production in excess of the Texas Railroad Commission's orders is materializing in East Texas despite the fact the Texas oil law and the commission's orders were upheld recently in Federal Court and also despite much evidence and some indictments, convictions, receiverships, and so forth obtained by commission agents against the violators.

It is felt by some that East Texas "hot" oil will be much reduced in the immediate future since the Texas governor on March 9 signed three oil bills recently passed in the special session of the legislature, making refineries subject to strict supervision of the commission, increasing the commission's income for proration enforcement, and ironing out conflicts in penalties for violations of oil laws and orders. The bills passed by two thirds majorities and thus became effective immediately upon being signed by the governor.

Skeptics

There are skeptics, however, who doubt that "hot" oil will be stamped out by the state government even with the new laws in effect. Like all new laws tried out in regulating East Texas, these laws, particularly the one pertaining to refiners, will probably have to run the gauntlet of court attacks before proving entirely effective.

Furthermore, it is argued by some, Texas oil laws were already strong, even without the added legislation, and the railroad commission's orders were already valid, as demonstrated by the recent federal court decision favorable to the commission; but still the flow of "hot" oil went on. In East Texas, it is charged, there has been too much investigation and not enough prosecution.

Shadow

Much of the "hot" oil produced in East Texas has been going to refineries in and near the big field, it is alleged, and since such crude has naturally been able to find market only at prices far below the official posting of $1 per barrel, it has been possible for gasoline made therefrom to be sold, with profit to refiner, as low as 3 cents a gallon; while gasoline from legal oil cannot be sold except at a loss for less than about 4½ cents at the refinery. The result has been demoralization of the gasoline market in Texas, with the weakness of prices spreading from refinery to filling station. East Texas refiners have formed an organization calculated to stabilize wholesale gasoline prices, and there was improvement during the past week in filling station prices. But still present was the great shadow cast by East Texas "hot" oil.

If

Apropos gasoline pooling and marketing agreements, government control, "hot" oil, and the stabilization of which the petroleum industry dreams, the head of a company with far-flung operations and a leader within the industry recently made these observations in an address: "If the courts don't adopt a too legalistic attitude in their interpretations of the agreements, if the federal administrator and various state commissions work in harmony and coordination, and if 'chiselers' can be broken down, then the petroleum industry is in a fair position for stability over a period of time." Only three if's were used, but multitudinous difficulties and doubts were conjured.

Comfort

Regardless of how much success will be achieved in the future in stabilization plans and efforts, the industry can be comforted by progress already made—if such progress is not sacrificed in the future through slackening of efforts within the industry or through decline of effectiveness of government activities.

Foremost among the comforting factors are increased earnings by the oil companies for the last quarter of 1933 and in the opening months of 1934, due to higher oil prices. From January through August, 1933, United States crude oil had an average value of 51 cents a barrel, while in consequence of the NRA stabilization program which began operating September 8, the average value of crude rose for the four months, September-December, 1933, to 93 cents per barrel.

Commenting on the above comparative prices, which originated in the Bureau of Mines, Oil Administrator Ickes lauded the program for balancing oil production with demand by saying, "It certainly is sounder business to produce one barrel of oil worth 93 cents than two barrels worth $1.02."

However

Will Rogers on the radio, touching in humorous vein on the national money policy, brought up the idea that if a 60-cent dollar is good maybe a 30-cent dollar ought to be even better. Similarly, the suggestion might be made that if a little control and stabilization has done so much for the petroleum industry then still more ought to be even better. For as a matter of statistics the rise in oil prices, comforting though it has been, has nevertheless left petroleum products cheap in comparison with other commodities.

Thus Department of Labor figures on wholesale commodity prices show that the average price for all commodities stood at 72.2 in January, 1934, on the basis of 100 for the year 1926; whereas that for petroleum products, chief of which is, of course, gasoline, was only 51.1, or at the bottom of the 11 groups of commodities included in the list.

Cheapest

Carrying the numbers back through 1930, the tabulation shows, similarly, that throughout the past four years petroleum products have consistently maintained their unenviable distinction as the cheapest commodities in general use in the United States, rating all the while even less favorably than farm products, next cheapest group most of the time.

(*Continued on page 32*)

Bills Giving Texas Commission More Power *Signed by Governor*

Austin, Texas.—Governor Miriam A. Ferguson on Friday signed all three bills that affect the oil industry and which were passed by the special session of the legislature that adjourned February 27. The laws are immediately effective. The most important and most controversial bill was that giving the Texas Railroad Commission right to require refineries to report the source of the oil that they use. Under provisions of this act, all persons storing, transporting, refining, reclaiming, treating, marketing, or processing crude oil or natural gas are required to keep records of their transactions. Reports from these records may be required by the commission for the purpose of determining the consumer or market demand for the products, and for the enforcement of the conservation laws.

The statute is intended to prevent handling of "hot oil", especially by refineries, reclamation plants and jobbers who operate in East Texas. There was a hot fight on the bill while it was in the legislature, and a similiar measure which was passed in the regular session last spring was vetoed by the governor. Since adjournment pressure has been brought to bear on the Governor from every quarter, and two large delegations from East Texas came to Austin to argue for and against the bill. The opponents were heard Thursday, the day before the bill was signed.

A second measure signed increased the income available to the Railroad Commission for conservation enforcement by more than 25 percent. The law requires oil companies to pay a tax of one-eighth of one cent per barrel on all crude produced, and the entire income, estimated at nearly $1200 per day is diverted to the use of the commission. The old law carried a tax of one-tenth of one cent, and allowed the commission only that portion of the fund that was specifically appropriated. More than $30,000 excess was collected in 1933 and turned into the general revenue fund.

The bill also provides that the commission may hire three new technical men to be paid $3750 annually, which with the additional men that may be hired with the increased income otherwise appropriated should give them an ample force for proration enforcement.

The third bill was of a corrective nature and merely setup the same penalties for the same offenses, as they were included in existing statutes.

That Governor Miriam A. Ferguson was still uncertain as to the best course for her to pursue, was indicated by her message, which accompanied the bills. She pointed out that she had concluded they should be signed to insure the control of hot oil in Texas, and because Attorney General James V. Allred and the Railroad Commission believed the laws were necessary. This statement was directed principally to the refinery control bill.

The Governor's message in full was as follows:

"I am handing you herewith House Bills Number 43, 96 and 99, which I have this day approved. In doing so, however, I am not unmindful of the force of the reasons urged for the veto of these bills. I share the view of many people who are informed about matters pertaining to the oil industry, that there is a serious doubt as to whether the passage of these bills will accomplish the result desired to bring about a stricter and more effective enforcement of our proration laws. If the powers conferred by the legislation are not vigorously exerted we may expect a continuation of the 'hot oil' conditions in East Texas. But in view of the fact that the railroad commission and the attorney general have insisted upon the passage of these bills and have urged the contention that their passage is necessary to complete an effective procedure against violations of our proration laws by what is known as 'hot oil' producers, and as the railroad commission and the attorney general are by law given the power to enforce these laws and it is made their duty to enforce them, I have decided to waive all doubts in the premises and have, therefore, ap-

(*Continued on page* 38)

"Full Conservation" *Dominates Ickes* Policy on New Fields

Washington, D. C.—Basic principles for the development of newly discovered oil fields and pools this week were laid down by Oil Administrator Harold L. Ickes, and will be applied to more than 200 plans which have thus far been submitted for consideration, under Section 7, Article 3, of the oil code.

The general policy to be adopted, the administrator said, will be one of "full conservation," which will be carried out by the three principles he enunciated.

"These plans are being studied by the technical experts and geologists of the Petroleum Economics Division of the Petroleum Administrative Board so that reports can be prepared for me," he explained.

"Three basic principles will control in considering these plans, each of the three designed to assure orderly development and conservation of the pool's resources to permit fullest utilization.

"Number one will be that all production shall be in conformity with allotments made pursuant to the oil code by any duly authorized federal or state agency. Number two will be that production of oil and gas from the pool shall at all times be without waste, and number three will be that production shall be limited to such amount as can be put to beneficial use.

"I believe that close adherence to these three fundamentals will result in future development fitting into the national program to conserve our easily exhausted stores of crude petroleum and gas," Administrator Ickes declared. "The protection of the gas pressure is essential to orderly progress and to increase the amount of crude oil that can be recovered from a pool.

"In accordance with this general program, plans for developing new pools will stipulate that there be wider spacing of wells than in the past, to prevent a return to the chaos prevailing when there was a well on every two and one-half or three acres, which resulted in the flagrant waste of gas energy and oil.

"Wider spacing of wells will permit full utilization of the gas pressure and the conservation of this energy. It is a measure endorsed to the fullest by the majority of the industry, and recommended by the Planning and Coordination Committee."

Texas Ouster *Suit Renewed Against* Major Companies

Austin, Texas.—Attorney General James V. Allred has renewed his fight to oust from Texas 15 major oil companies against whom he brought suit more than two years ago.

During the past week the state filed its brief on appeal in the Third Court of Civil Appeals at Austin. The trial court dismissed the suit on the grounds that the companies, even though they might be guilty of the charges complained of, had been granted the right to perform the same acts under provisions of the National Industrial Recovery Act.

In the brief filed by the state, Allred argued that the codes promulgated fair competition can be no more comunder the Recovery Act did not apply to intrastate commerce.

"It is fundamental that the code of prehensive than the National Recovery Act," the state contends. "If the Act did not authorize the regulation of purely instrastate transactions, then the code cannot be said to validly do so . . ."

The brief pointed out further that "To be subject to Congressional control, the transaction (must) 1, be interstate commerce, or 2, so affect interstate commerce as to be a burden thereon. No one, not even the defendants, would urge that the sale of petroleum products as alleged by the plaintiff, is interstate commerce . . ."

The state also argued that even though the National Recovery Act did supersede the anti-trust laws of the State of Texas, penalties for violations previous to the passage of the act would not be abrogated.

The state contends that it was the intention of Congress to limit the operations of the law—(1) to interstate and foreign commerce and (2) acts which the cours find directly affect interstate commerce."

For these reasons, principally, Allred contends that the trial court erred in sustaining the general demurrer of the defendants.

The suit was filed in December of 1930, and charged that the 15 major oil companies named, which included all of the groups with large chains of filling stations in Texas, had entered into a conspiracy with the American Petroleum Institute and Texas Petroleum Marketer's Association, which was intended to result in complete domination of the retail filling station outlet in Texas.

An attack was aimed especially at the general use of the "lease and agency" contracts, under terms of which filling station operators agreed to handle no other products than those of the company which furnished pumps, tanks and other similar equipment.

Treasury Seeking Taxes On Oil Incomes

Washington, D. C. — Launching a drive to prevent any evasions of the present income tax law in order that the government may collect a maximum of tax revenue before the end of the fiscal year on June 30, next, treasury officials are requiring oil companies to furnish lists of everyone sharing in profits.

Through these lists, and lists of salary payments by corporations, the government expects to collect large sums in back taxes, estimated at nearly $1,000,000,000.

One of the alleged sources of evasion which the treasury is determined to eliminate lies among persons receiving large sums from oil land leases and oil pool profits through partnership agreements with oil companies. In some instances, it is said, as many as 500 persons have received payments from a single group of wells.

Gasoline Agreement Controversy to Be Settled

Washington.—Officials of the oil administration and Department of Justice this week began conferences designed to straighten out a tangle resulting from the approval recently given by Secretary Ickes to the so-called California Gasoline Cartel and the consent decree obtained by the Department of Justice in 1930.

The consent decree was entered following government action to stop a group of companies that planned to purchase distress gasoline and allocate it among themselves. The cartel agreement provides for the purchase of such gasoline and its marketing so as not to disturb the price situation.

Justice department officials are opposed to those features of the agreement that insure to independents a differential in price, and are seeking changes that would place all dealers on the same price footing. This is opposed by the oil administration, which holds such changes would entirely nullify the success of the agreement. The controversy has been carried to the White House, where it is expected President Roosevelt will make a decision as to how the matter should be straightened out.

Bill Proposes Heavy Penalties for False Data

Washington, D. C.—Legislation imposing heavy penalties for the filing of false data with recovery agencies, aimed particularly at the oil industry, was passed by the House of Representatives March 5 and will be pushed immediately in the Senate.

Making it a criminal offense to wilfully present false data with intent to defraud the government or any government agencies, the measure provides penalties up to five years' imprisonment or a fine of not exceeding $5000, or both.

The bill was brought before the House following representations by Interior Department officials that difficulties were being encountered in enforcing the regulations of the oil code.

"Hot Oil" Meeting In Tyler March 13

Austin, Texas.—At a meeting scheduled to be held in Tyler on Tuesday, March 13, the "hot oil" committee of the Texas Petroleum Council will take up this question with the East Texas Chamber of commerce.

Efforts will be made to bring about closer cooperation between the two bodies in the fight against the production of "hot oil."

"Both organizations are much encouraged over recent developments," said Allen Peden, secretary of the council, "and have every hope that, with public sentiment in favor of firm and adequate enforcement growing daily, it will be eventually accomplished."

Jury in State Court To Hear Laredo Gas Case

Austin, Texas.—Trial of the Laredo gas case, involving rates established by the city for gas supplied by the United Gas Company, has gone to trial before a state district court in Austin.

This is the first time in the history of Texas that a case of this kind has been taken up in the state courts. Formerly they have been tried in the federal courts, but in this instance these courts have declined jurisdiction.

The case will be tried before a jury consisting largely of farmers.

Should Prospecting *for Additional Oil Reserve* Be Curtailed?

S. F. SHAW
Consulting Engineer

THE article by Professor Evan Just[1] on the subject of "Proration and Unrestricted Wildcatting" leads to some interesting speculation. The contentions of the past two or three years have been to the effect that wildcatting should be discouraged, and it would seem that the price received for oil during the past two years would have accomplished that purpose, if it were at all possible, and indeed, wildcatting has declined to the point where, in the minds of a few observers, the danger line has been reached. The extremity of this country would be a dire one were we to suspend all oil discoveries until the moment arrived when we were short of oil, and then expect immediately to begin explorations and discover new fields at will. Oil discoveries are not made in that way.

As much as three years ago the warning was sounded by Wallace E. Pratt[2], that if our oil reserves are to be maintained it would be necessary to speed up exploration and development. Certainly Mr. Pratt was in a position to know the status of the oil reserves in this country. The policy followed by the Humble Oil & Refining Company during the past three years in acquiring huge blocks of land for exploration, among which can be mentioned the King ranch in Texas, covering more than a million acres, indicates that the Humble Company has full reliance in the judgment of Mr. Pratt.

Mr. Pratt's paper is so pertinent at this time that a few excerpts will bear repeating:

"The price of oil finding is eternal vigilance . . . Continued, unremitting effort, intimate familiarity with the progress of exploration as well as with surface geology through the territory in question; these, among others, are the indispensible attributes of intelligent search for petroleum. Recent phenomenal success in discovery is due, as a matter of fact, largely to the momentum which oil finding activity acquired from the stimulus of the war, 15 years ago. The search inaugurated at that time has only within the last five years become really effective. Any suspension of effort now must inevitably cause a similar lag in the effectiveness of our effort when it is finally renewed . . . In spite of our overproduction, new supply is actually lagging at the moment."

In the course of time these words may seem prophetic unless activity is soon renewed in the search for oil. Mr. Pratt calls attention to the fact that in the 14 years from 1917 to 1930 inclusive, production amounted to nine billion barrels, while known reserves amounted to 10 billion barrels and that 20,000 wells per year must be drilled to keep up that reserve. As a matter of fact, it is probable that the reserves existing at the end of 1930 were considerably overestimated, as will be discussed later in this article, which is another excellent reason for continuing the prospecting activities.

[1] Evan Just "Proration and Unrestricted Wildcatting" Oil Weekly, March 5, 1934.
[2] Wallace E. Pratt "Industry Must Drill 20,000 Wells Yearly." Paper read before the San Antonio Section of the American Association of Petroleum Geologists.
[3] Valentin R. Garfias "Our Inadequate Oil Reserves" Oil Weekly, November 6, 1931, p. 26.

Drilling during the years 1924-1930 is shown in Table 1.

TABLE I

Year	Completions	Oil Wells	Gas Wells	Dry Holes	Bbl. Initial
1924	21,894	14,771	2,173	4,950	3,255,491
1925	25,623	16,558	2,330	6,735	4,300,356
1926	29,319	19,013	2,341	7,965	3,683,787
1927	24,143	14,442	2,491	7,210	4,918,197
1928	22,331	12,526	2,727	7,078	8,365,778
1929	26,356	15,572	2,870	7,914	6,170,311
1930	21,240	11,640	2,866	6,734	9,955,835
Total	170,906	104,522	17,798	48,586	
Average	24,415	14,932	2,542	6,941	

The drilling of wells during 1924-1930, together with wells drilled in previous years, yielded a production that provided for consumption during those years and at the end of 1930 left in storage above ground about 411,882,000 barrels of refinable crude, besides leaving in the known reservoirs a quantity then estimated at nine billion barrels.

Since 1930, drilling has been done to the amount noted in Table 2.

TABLE II

Year	Completions	Oil Wells	Gas Wells	Dry Holes	Bbl. Initial
1931	12,432	6,788	1,985	3,659	5,490,609
1932	15,021	10,444	1,027	3,550	2,368,238
1933	12,312	8,068	932	3,312	3,016,502

It will be noted that a large decline has resulted in the number of wells drilled since the comments made by Mr. Pratt. At the end of 1933, refinable crude in storage was estimated at 355,394,000 barrels. There has, therefore, been a reduction in stored reserves as well as in underground reserves. Since 1930, there has been discovered only one major pool, that of Conroe, for which the recovery is estimated at from 125,000,000 to 500,000,000 barrels. True, East Texas, Kettleman Hills, and smaller pools discovered prior to 1931 have been developed, but estimates of ultimate recovery for those pools were probably as high at the beginning of 1931 as at present.

Discoveries since the beginning of 1931 would, therefore, seem to be sufficient to supply the oil consumed in considerably less than one year.

The question of our inadequate reserves was touched upon in the latter part of 1931 by Valentin R. Garfias, who stated as follows:[3]

"In these days of haphazard over-production of oil, not only laymen but many an oil operator is led to believe that present conditions are not only inevitable, but that the available domestic reserves are amply sufficient for an indefinitely long time. An unbiased analysis of the controlling factors involved, however, soon throw an entirely different light on the situation, and makes it apparent that all the known oil reserves in the United States available, even at reasonably high prices, would be exhausted in nine years if called upon to support the entire needs of the American market. Obviously, as these reserves cannot all be produced within the next nine years, it follows that they will be inadequate to supply requirements before that time . . . It appears safe to assume that the domestic consumption of

petroleum and its products in the United States will aggregate during the next nine years figures of the order of 9,000,000,000 barrels, while the domestic consumption and exports will total close to 10 billion barrels, . . . The underground reserves available to meet future demands, is the oil which constitutes the so-called known underground reserves, estimated at close to 10 billion barrels. Theoretically, these reserves can supply domestic consumption and exports for nine years, but in actual practice it is obviously impossible to produce their entire volume within that time, and they are, therefore, inadequate to meet such requirements. The known reserves will become available in a gradually diminishing volume for a longer period than nine years, and after making due allowance for the inevitable discrepancies and errors, it is clear that long before this time elapses the American oil industry will feel the result of curtailed domestic supplies, and will have to rely more and more on foreign oil . . . It, therefore, becomes imperative that the American oil industry reverse its policy of procrastination and take now the necessary steps to produce today only the oil that is actually needed and conserve today's overproduction for tomorrow's needs."

The discovery and development of a large reserve of oil is not the work of a few months. This matter has been touched upon by Frederic H. Lahee:[4]

"Notwithstanding the assistance rendered by geology, a remarkably large percentage of wildcats are dry . . . This percentage is augmented by increased depth of drilling and its attendant hazards . . . Reliable surface evidences of geologic structure, as yet untested by drilling, are more and more difficult to find . . . It is evident that the factors tending to increase the dry hole percentage are more numerous and more likely to be effective than those acting in the opposite direction."

There is another angle of the situation that is not being considered with the care that it deserves. The finding of oil has been carried to greater depths as time has passed and will probably reach toward still greater depths in the years to come. Greater depth means greater pressure and usually thinner oil, under which conditions the oil is expelled from the reservoir with much greater rapidity than in the shallower sands. Under these conditions an oil field is quickly exhausted of its recoverable contents. Probably a greater percentage of recovery is obtained than in the more shallow reservoirs, but the increased percentage of recovery is far from being in proportion to the increased rate at which the oil can be produced. The fact that these deeper fields exhaust their oil more rapidly has been obscured by the fact that, to a greater or less degree, proration has been in force during the past four or five years. Unless proration had restricted production greatly it is not difficult to believe that such fields as Oklahoma City and the deep production at Big Lake would have been exhausted and almost forgotten by the present time.

The writer has made some estimations of the reserves existing in several of the large flush pools of the Mid-Continent area as follows:

TABLE III

Field—	Bbls. Ultimate Recovery	Bbls. Produced to End 1933	Bbls. Remaining in Reserve
East Texas	1,000,000,000	434,000,000	566,000,000
Hobbs	100,000,000	41,000,000	59,000,000
Oklahoma City	253,000,000	189,000,000	64,000,000
Van	150,000,000	52,000,000	98,000,000
Yates	300,000,000	180,000,000	120,000,000
Total	1,803,000,000	896,000,000	905,000,000

[4]Frederic H. Lahee, Paper read before the American Association of Petroleum Geologists, early in 1933.

[5]Edwin Wahlstrom, "Development and Production Practice, Hobbs Field, New Mexico," Oil Weekly, April 24, 1933.

It is true that much higher estimates have been made by various geologists and engineers, but let us see what is happening to some of these higher estimates:

The Hobbs field is one in which wells came in with high initials, and has been produced under greatly restricted production. Early estimates of ultimate recovery from the Hobbs field were placed at 200,000,000 barrels or more. An estimate of the Hobbs field made in 1933[5] on a considerably greater extended field than early estimates, but in the light of a better knowledge, had reduced this to 125,000,000 barrels, and it is not at all impossible that this later estimate will be revised.

The Oklahoma City field has been estimated at close to 500,000,000 barrels ultimate recovery, and yet up to the end of 1933 the total recovery is only 189,000,000 barrels and the field is fairly well along toward exhaustion. The Wilcox sand alone in the Oklahoma City field has been estimated as capable of yielding an ultimate recovery of 400,000,000 barrels but to the end of 1933 it had yielded only 107,000,000 barrels. Plotting bottom-hole pressures against cumulative recovery and extrapolating, would at this time appear to allow for little more than a total of 150,000,000 to 175,000,000 barrels from the Wilcox zone.

The wells in the Oklahoma City field came in with enormous initial productions, ranging up to 100,000 barrels per day. These initials, however, were taken over periods of only a few hours with adjacent wells closed in, and production of the offset wells had been restricted to an actual production of only a few percent of these initials. Such initial productions cannot be compared in any way with the methods that had been previously employed where offset wells had been produced at maximum capacity and while offset wells were being produced to capacity while new wells were being brought into production.

Nevertheless, initial productions at Oklahoma City would have been large under any method of operation due to the great pressures in the reservoir, the high degree of porosity and great thickness of the sand and to the thin character of the oil. These high initials in themselves, however, would not necessarily spell large ultimate recovery as compared with similar conditions of porosity and thickness in older and more shallow sands. It would mean that the oil would be exhausted much more rapidly than usually had been the case in the shallower sands.

The Conroe field is the only large pool discovered in the past two or three years, and estimates of recovery up to 500,000,000 barrels have been made. Undoubtedly such estimates have been based on factors similar to those obtaining in the Hobbs and Oklahoma City fields. O. L. Brace, when commenting on estimates of ultimate recovery from the Conroe field, has suggested that 125,000,000 to 150,000,000 barrels would probably be a more conservative figure to use for this field.

Kettleman Hills has been estimated as capable of yielding an ultimate recovery upwards of 1,000,000,000 barrels, but already rumors are afloat tending to indicate that disappointment is pervading the atmosphere in regard to the ultimate recovery as compared with the most optimistic estimates entertained at one time.

The writer has summed up estimates of oil possible to produce in 1934 as being sufficient to accommodate the demands for oil in the United States, although the East Texas field may need to be opened to greater capacity than in 1933 to accomplish this. Unless additional large pools are discovered in 1934, there appears to be a good chance for a shortage of oil in 1935.

If we are correct in assuming the flush fields have been greatly overestimated, would it not be prudent to increase the prospecting for oil, rather than to curtail it?

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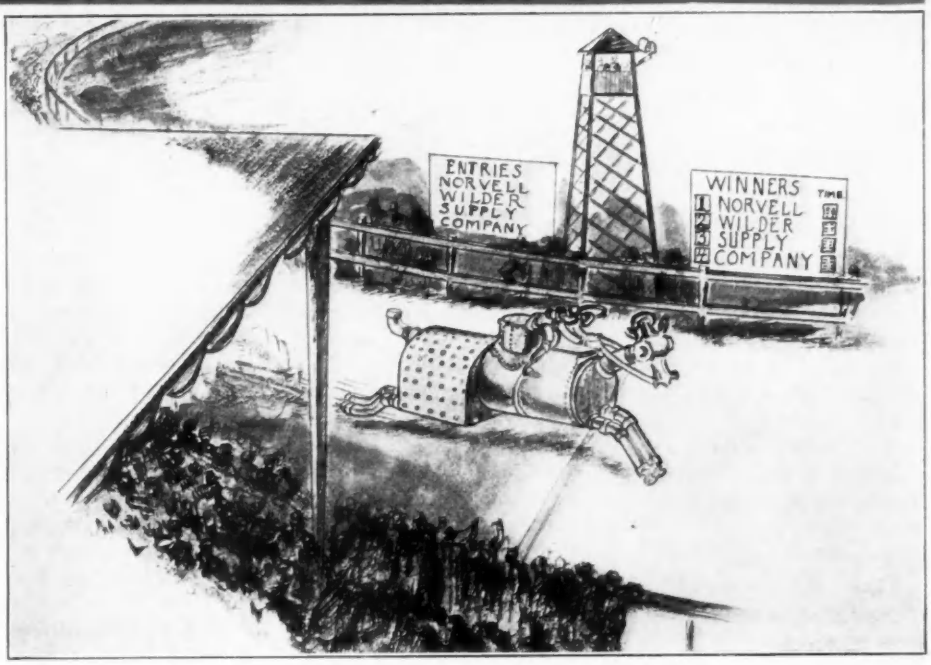

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Graphic Records *of Drilling Time Have Many* Valuable Features

FRANK W. SWIFT
Independent Operator

THE adopted practice on most drilling wells at this time is for the driller, at completion of his tour, to make a written record of the number of feet of hole drilled during his tour. He also records thickness of formations encountered, from which a complete log of the well is compiled. If shut down for any reason that makes it impossible for him to make hole, notation is made on his report of reason for shut down. This is in fairness to the drillers because they naturally are concerned in making hole and, if they fail, they want their employers to understand why hole has not been made and they know these reports, as they come to the attention of employers, will show cause why a satisfactory showing has not been made.

These reports usually serve also as time sheets, but if any daily report is kept, showing the number of feet of hole drilled each day, together with shut down time, valuable drilling curves can easily be plotted from these reports.

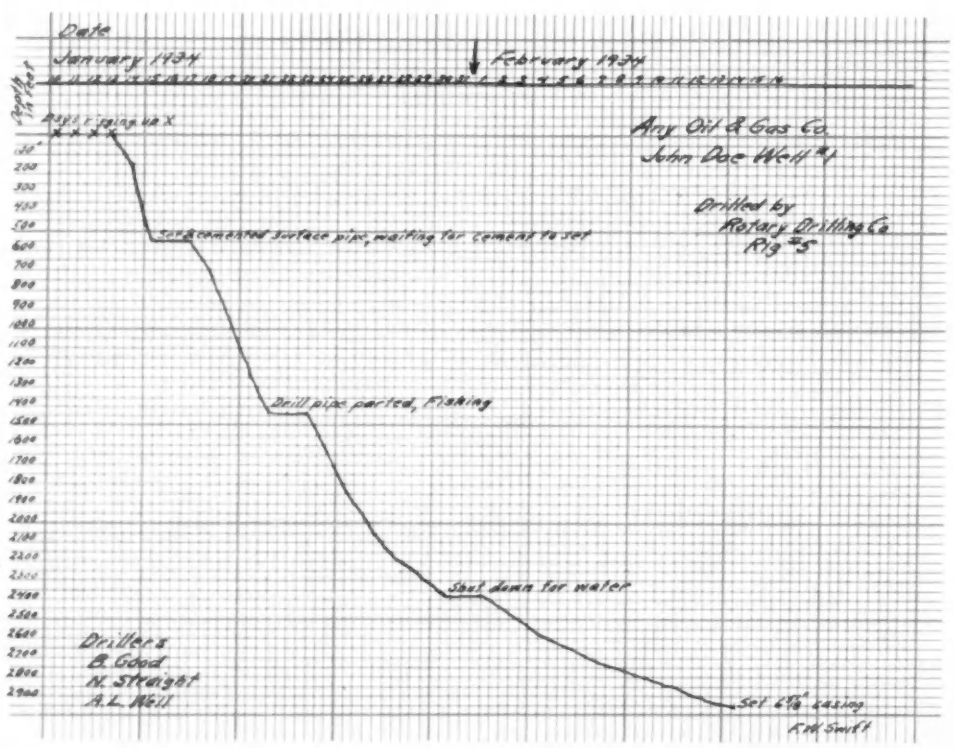
These curves, as illustrated, will show the number of days spent rigging up on each well, amount of hole drilled each day, depth of hole on a certain day, amount of time shut down when no hole or little hole was made and total number of days required to drill the well.

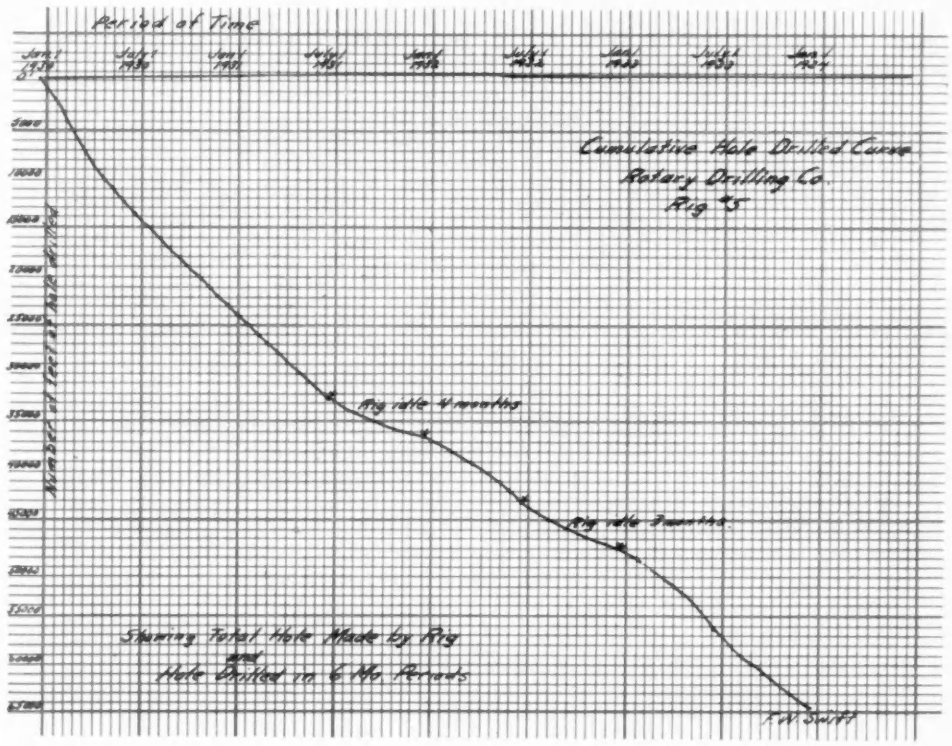
When several well drilling curves are plotted on tests drilled in a certain area, a comparison can be made of the curves and they will readily determine the well or wells upon which the best drilling time has been made.

If shown to drillers, perhaps copies even tacked up in the derrick, may prove a big incentive for drillers to beat the well drilled and plotted previously. They show him at a glance how much hole should be expected to be drilled in a day at a certain depth in the hole. Bearing the drillers names, a comparison can be made from these curves of results obtained by various drillers. Also comparison can he made between different drilling rigs.

These curves can be easily filed as to rig number or driller in change of rig and require but little space in filing as compared to the daily reports. The information on one curve sheet condenses all data contained on all daily reports of a well.

Where good drilling time has been made on a number of wells in a certain field, these curves should prove a source of satisfaction to contractor or company officials and something they should be proud to show anyone interested. When seeking new capital to finance further drilling operations, these curves containing vital information in a condensed form will show to persons solicited conclusively what has been done and what can be expected to be done. They will prove convincingly that the contractor is running his business in a business like manner





and he has proof right at hand of his ability to drill a well in good time.

Company executives from whom new drilling contracts are sought may determine the capability, reliability and responsibility of the contractor upon examination of these curves. From same, these executives also have, at a glance, information helping them to arrive at conclusions of fair prices to be paid for drilling.

From these plotted records estimates can quickly be made by the contractor when bidding on contract for test in certain fields by examining curves of well drilled by him in the territory closest to the proposed drilling. The curve being so easily accessible, it is not necessary to search through files for old time sheets or daily drilling reports that accumulate so rapidly that information sought might have been destroyed due to file space.

The curves can be plotted alike for both rotary and cable tools. In case of cable tools they will show time spent underreaming and carrying pipe, depth at which various sized casing was landed, caves and time spent fighting same, amount of wet hole drilled and time spent testing various pay formations encountered.

As shown in the illustrations, the curves are plotted on coordinate paper, spaced in such a manner that 100 feet of depth spaces can be had vertically and the day of the month shown horizontally in a space of same size as 100 feet vertical space. The curve will bear the farm name and number of the well, for what company drilled, name of drilling contractor and name of drillers who worked on the well.

When the curve remains horizontal for more than a day, indicating that no hole was made on these days, a small notation can be made at this point of the reason why there was delay. If this should be a fishing job, for instance, the curve shows at a glance the number of days spent fishing.

If kept for considerable periods for wells drilled in a certain locality with notation made of time shut down for bad weather, some estimation can be made of shut down time that might be expected, especially in certain winter months. If the well has been shut down for fuel or water the curve will show how detrimental this shut down was to a good run and how much hole could have been made while shut down.

For easy comparison in time of wells drilled in a certain area several wells can be plotted on one sheet in different color ink or pencil showing the days of the month in same color as the well curve.

From a number of curves of wells drilled in same locality an estimate curve can be plotted and given to drillers, giving them something to spur them on. Of course the estimated drilling time curve cannot show or make provisions of shut down time even though some trouble might be anticipated.

Cumulative graphic records can easily be plotted from a number of individual well curves and this cumulative graphic record will show total amount of hole drilled by each rig and the time within which it was drilled. Time intervals of six months or a year are shown vertically and total number of feet of hole drilled within the interval in corresponding space horizontally.

This graphic record should be of service in showing the amount of hole that might be expected to be drilled by a certain rig in a certain locality if kept busy. These graphic cumulative hole drilled records should prove conclusive and support any credits taken on income tax return for wear and tear, depreciation, obsolesence, etc.

The writer knows of one large and successful drilling contracting firm in Texas which has plotted a curve of every well drilled and this firm has drilled in practically all major fields. This firm has benefited by having in a condensed form the drilling results obtained on all wells and has profited by taking advantage of the usefulness of these drilling curves.

Drillers are pleased to know their work is being recorded permanently and their efforts being in such a form that credit is plainly visible on the drilling curve when credit is due. The curves are a ready reference as to their ability and in seeking employment they can refer to firms keeping same and to the curves of the wells upon which they worked for quick recommendation or disapproval.

Do Magnetometer Surveys Fail *to Reveal* Commercial Structures?

W. P. JENNY
Consulting Geologist and Geophysicist

IN the early years of geophysical prospecting for oil the magnetometer enjoyed great sympathies with majors and independents alike on account of its inexpensive and speedy operation in the field. The interpretation of magnetometer surveys, however, encountered considerable difficulties, which greatly reduced the efficiency of this method, and the commercial results of several years' intensive prospecting were few.

But since the earth's magnetic field shows everywhere major and minor disturbances, which must be related to geological features somehow, the operators would undoubtedly nevertheless have gone to considerable expense, trying to improve the magnetic method, if other geophysical methods had not simultaneously been developed, which seemed to hold out better chances for a successful prospecting.

Later developments showed that the expectations set in any of the various geophysical methods during their infancy were never fully realized. Thus even the reflection method, which a year or two ago has held out hopes to supplant all of the other geophysical methods, has already joined their ranks, insofar as fading belief in its infallibility is concerned.

The too great expectations set in the various geophysical methods and the following deception and rejection has lead to a regular fashion show of such methods.

But now, as this show is over, we have learned that none of the various methods developed is a panacea for the finding of structures, nor may we expect an unfailing method in the future, if we base our expectations on past experiences.

Though further development may be anticipated for all of the methods thus far developed, it appears now, as if the possibilities for the torsion balance, pendulum, refraction and reflection methods are fairly well outlined.

Other methods, unknown or only partly known at present, may be developed into commercial methods. Thus the limitations of the electric and radioactive methods, for example, are far from being defined as yet and, in the writer's opinion, also the magnetic method holds out great future possibilities.

Easy Field Work Indirect Reason for Early Rejection of Magnetic Method

The inexpensive and seemingly easy field work of the magnetic method was indirectly the main reason for its early rejection by most of the oil operators. The magnetic field work appeared so simple that apparently every high school boy could be trusted with it. Huge areas were covered monthly by magnetometer surveys, but the magnetic information gained after months and years of work was often not even of a regional value.

It has lately been the writer's privilege to study a considerable number of magnetometer maps which covered vast areas in the Mid-Continent and Gulf Coast and which had been surveyed by various observers. As a rule, these regional maps neither agree among themselves nor agree with the U. S. Coast and Geodetic Surveys data.

Within distances of 20-30 miles as much as 100-300 gamma discrepancies between magnetometer maps made by different observers, or between magnetometer maps and the C. G. S. data are more or less the rule.

Often the C. G. S. data differ even much more, but in those cases the C. G. S. anomalies are mostly due to artificial local influences. The large majority of the station sites for the C. G. S. observations are, however, sufficiently free from purely local disturbances.

Two extended magnetometer surveys in central Oklahoma, for example, both of which comprised the four C. G. S. stations at Fairview, Okeene, Watonga and Geary, showed such discrepancies between themselves and with the C. G. S. data, that it was not possible to determine which one of the three surveys should be credited with the best accuracy.

If the three surveys were made to agree at Fairview, they would disagree at Okeene in such a way that survey A was lower and survey B higher than C. G. S., at Watonga survey A was still lower and survey B was even lower than A, at Geary survey B checked fairly well with C. G. S. but survey A was considerably higher. The discrepancies ranged from ± 50 to ± 150 gamma at each station.

The average magnetic anomaly as due to regional or local structure in this area should amount to between 100-300 gamma according to the writer's vector map of Oklahoma (W. P. Jenny, "Magnetic Vector Study of regional and local geologic structure in the Principal Oil States," Bull. Amer. Ass. Petrol. Geol., vol. 16, No. 12, Dec. 1932.) How could a magnetometer map with an accuracy of ± 150 gamma possibly yield any structural information, regional or local, in such an area?

In Figure 1 is shown a comparison between two magnetometer maps of the Oklahoma City field area. One of the maps has been published by O. C. Clifford (Magnetic Resurvey of Oklahoma City Field, Bull. Amer. Ass'n. of Petro. Geol. Vol. 16, No. 12, Dec., 1932), the other is the best choice of three maps of the same area, which came to the attention of the writer. The other two maps disagree from the two contained in Figure 1 insofar, as they only show a general regional increase of the magnetic vertical intensity southward from Oklahoma City. But even these two maps, though the closest check out of four maps, show discrepancies of over ± 75 gamma within a few miles distance and are about as much different as Clifford's maps before and after development of the field. The southern

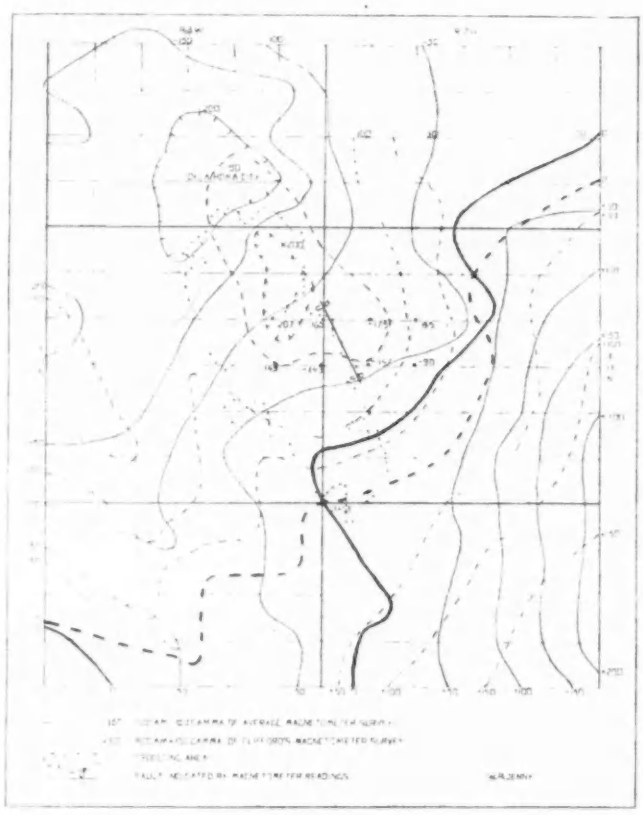


FIGURE 1

Comparison of Two Magnetometer Surveys of Average Accuracy in the Oklahoma City Field Area, Before Development of the Field.

part of the average magnetometer map checks even closer with the second map of Clifford.

Because the large majority of producing structures were found to yield magnetic "lows," some operators were induced to think in the early days of magnetic prospecting for oil that commercial structures would show up as "lows." It could, however, be demonstrated that in most cases these "lows" were simply the combined effects of casings and derricks, whereupon the sentiment again turned toward magnetic "highs", as prospective commercial structures. The fact that a magnetic "low" was found above the Oklahoma City structure has later on been construed as a proof that the structure itself has no magnetic effect.

If we assume, however, this structure to be located at the north end of a segment of the southern extension of the Nemaha ridge, there follows by simple reasoning that a relative magnetic "low" may be expected as the result of the induction of the earth's magnetic field.

The large fault to the east of the field has been accidentally picked up in a number of surveys by sets of two stations favorably located on both sides and close enough to the fault. In Clifford's map of 1927 this fault seems indicated by two sets of stations three and four miles to the north of the base station. In contradiction to the general tendency, both eastern stations show a lower magnetic intensity than the western stations, which lie on the upthrown side of the fault.

Poor Accuracy of Early Surveys

Failure of the magnetic method to reveal commercial oil structures must be attributed in the first place to the poor accuracy of the field surveys. After years of experience we have now learned that the magnetic effect of most commercial structures amounts to tens of gammas, rather than to hundreds of gammas, and that the accuracy of magnetometer surveys should therefore approach ±5 gamma, rather than ±50 to 100 and more gamma. If the gravimetric field of the Gulf Coast had been surveyed by torsion balances with an accuracy of ±10 Eoetvoes, the best of interpretations would have failed to reveal any suggestions of deep seated domes.

Induced Magnetic Field Varies With Direction and Geographical Latitude of Structure

But, even with an equal field accuracy, the magnetic anomalies are much more difficult to interpret, than gravitational anomalies, because of the variations between the direction of the inducing magnetic field of the earth and the strike of the magnetically active structure. One and the same anticlinal ridge will produce entirely different

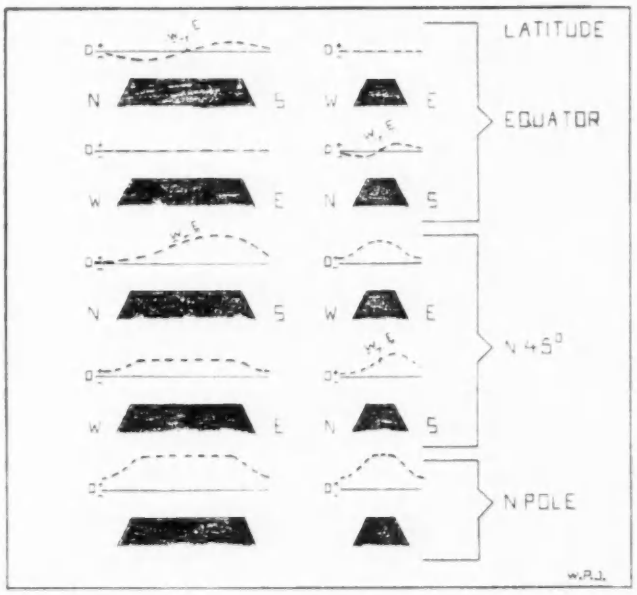


FIGURE 2

Schematic curves of vertical magnetic intensity over Granite Ridge with different orientations and latitudes.

magnetic anomalies, if its strike is north-south or east-west and the character of the magnetic anomalies is further dependent upon the geographical latitude of the structure, as shown schematically in Figure 2.

Distinction Between Petrographic and Structural Anomalies

Another difficulty in the interpretation of magnetic anomalies, which is also encountered in the interpretation of gravimetric anomalies, is the distinction between structural anomalies and anomalies of petrographic or stratigraphic character. Though the sources of magnetic anomalies are as a rule deep seated, ferrugineous surface beds will often exercise disturbing influences. Structural anomalies may effectively be distinguished from petrographical anomalies, if the magnetic field is surveyed both horizontally and vertically, and if these measurements are combined into local magnetic vectors in the space. In this respect the magnetic method is far ahead of the gravimetric, but unfortunately this circumstance has not been taken into due consideration heretofore.

Magnetic Vector Method

The combination of the anomalous magnetic elements into a vector in the space further allows far reaching con-

clusions with regard to changes of the magnetic field for considerable distances.

For a number of states the anomalous magnetic horizontal and vertical vectors at the U. S. Coast and Geodetic stations have been combined by the writer into local magnetic vectors in the space. An example of the conclusions, which can be drawn from these local magnetic vectors is given by the magnetic study of the recently discovered Hart field, Michigan.

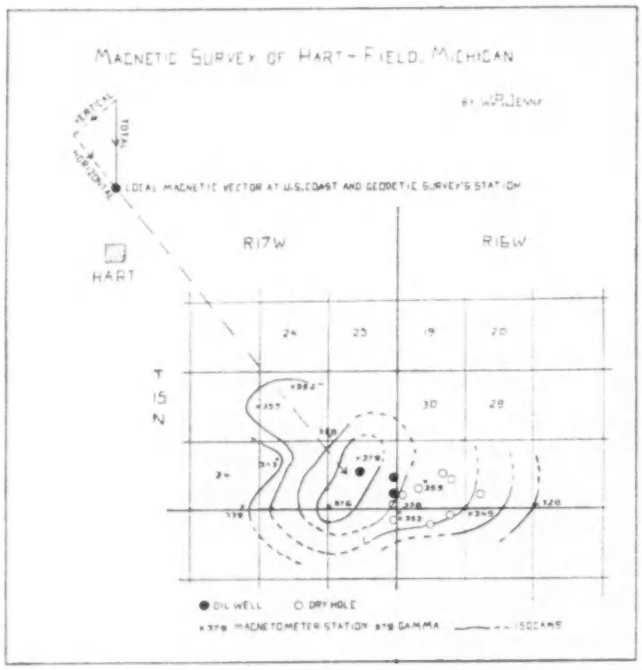


FIGURE 3

The direction of the local magnetic force, as indicated by the vector at Hart (Figure 3), suggests a magnetic "high" to the south-east of Hart, which might correspond to an uplift with a possible northeast-southwesterly axis. Prompted by this suggestion, the writer has made a casual magnetic survey of the Hart field in order to check the conclusions drawn from the vector map. Figure 3 shows the locations of the first wells and the isogams based upon 12 magnetometer stations. The isogams check fairly well with the contour lines drawn on the red-beds of the Coldwater, but, in contradiction to present geological conceptions, seem to be in favor of the regional magnetic vector, indicating a northeast-southwesterly trend of the structure. Though the production from the Traverse has been disappointing so far, there seems to be no doubt but that the magnetic data indicate a considerable uplift.

Future of Magnetic Method

A large number of successful detailed magnetometer surveys have been published in the course of the years, but the average operator has been so disgusted with the complete failure of his vast regional maps to even yield regional structural information that reports of successful magnetic prospecting met with little credulity and, even if they could be proven, were thought of more in terms of lucky accidents than as the result of earnest research work.

The application of three-dimensional magnetic prospecting will unquestionably improve a great deal the chance of locating commercial structures magnetically. It is not so much the writer's intention, however, to draw renewed attention upon the magnetic method at the expense of other geophysical methods, but rather to encourage magnetic investigations as a great help for the interpretation of results gained especially by the gravimetric and seismic methods. Both these methods work, as a rule, on beds considerably above the magnetically active horizons and in many cases, only the combination of their data with the data gained magnetically from deeper strata will lead to a proper understanding of the gravimetric and seismic effects of the shallower beds.

Figure 4 should demonstrate the advantages that may be derived by a combination of reflection with magnetic investigations.

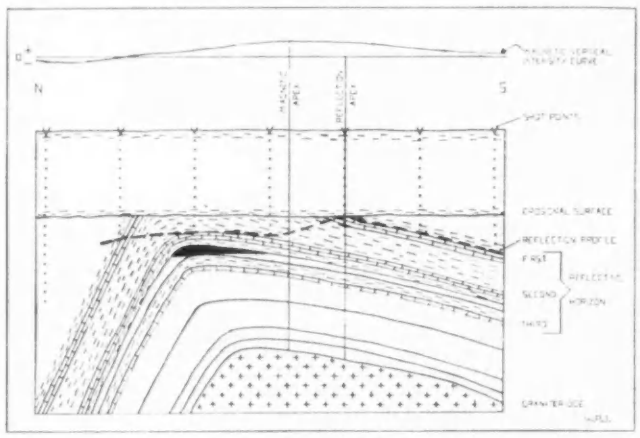


FIGURE 4

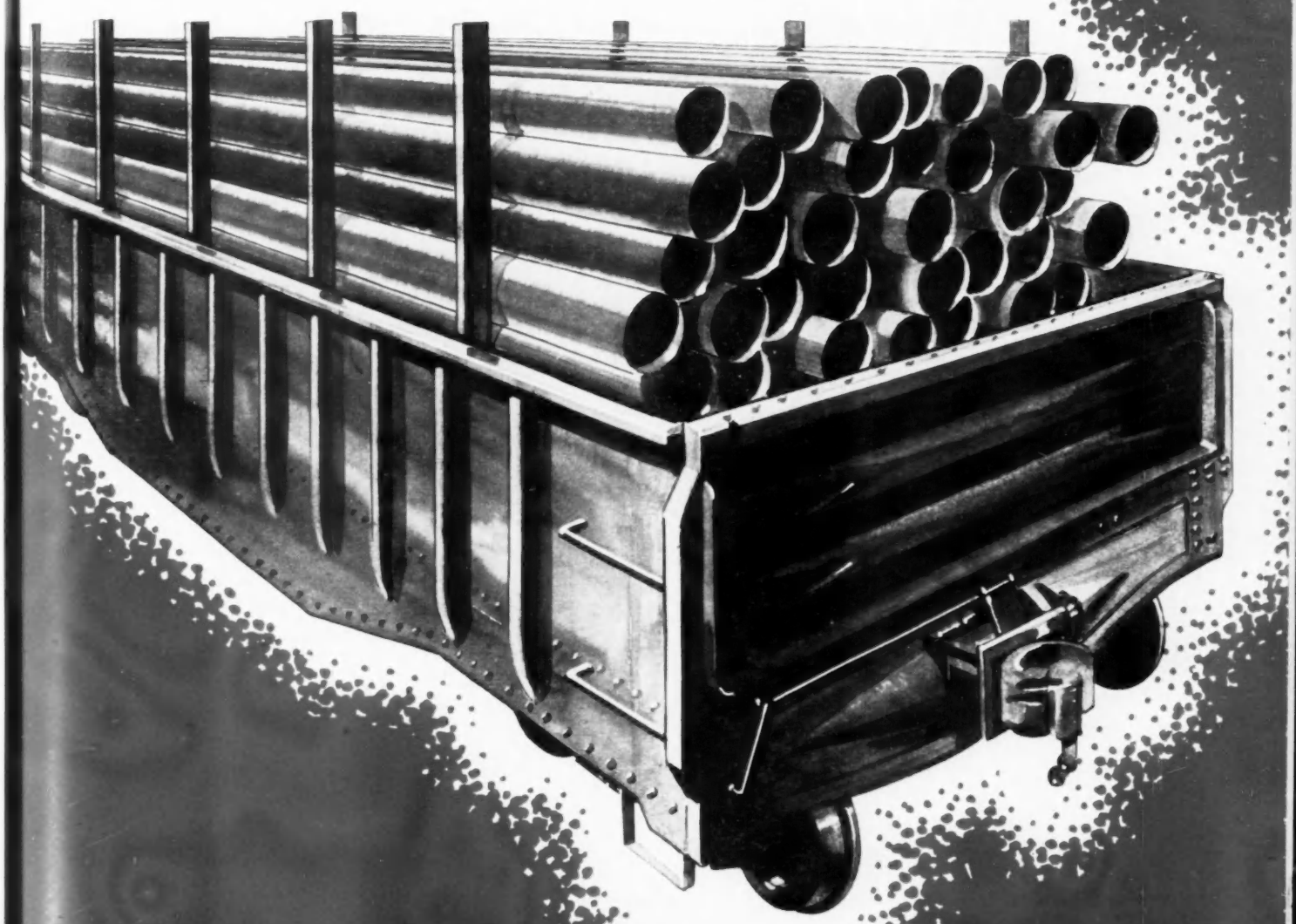
Combined reflection and magnetic survey

Three reflecting horizons are encountered above the granite ridge. The first horizon is eroded near the apex of the structure. The interpretation of the reflection data alone displaces the structural apex towards the south. The reference to the magnetic data, which indicates a structural apex farther north, should give a clue for a correct interpretation of the reflection data. If the ridge lies in directions, which differ from the west-easterly direction assumed in the figure [4], then the magnetic data might be more difficult to interpret, but with sufficient accuracy in the field and experience in the interpretation, valuable information may practically always be obtained. The geologist knows that similar subsurface conditions have repeatedly marred the interpretation of reflection surveys and he should welcome the slightest additional information.

Magnetic Surveys Inexpensive

Accurate magnetic surveys, even three-dimensional ones, are inexpensive, as compared with other geophysical surveys. It would be economically justified to magnetically survey most any prospect, even in areas where the magnetic method does not hold out much hope of success. Little money is lost, if the magnetic method fails to yield an anomaly, and much money may be saved by a more intelligent layout of torsion balance or reflection surveys, on the base of only faint regional magnetic information. But often it will be found that magnetic surveys alone yield much more detailed and useful information than is generally expected and in many instances furnish valuable clues for the correct interpretation of other geological or geophysical data.

NO SCALE IN A CARLOAD



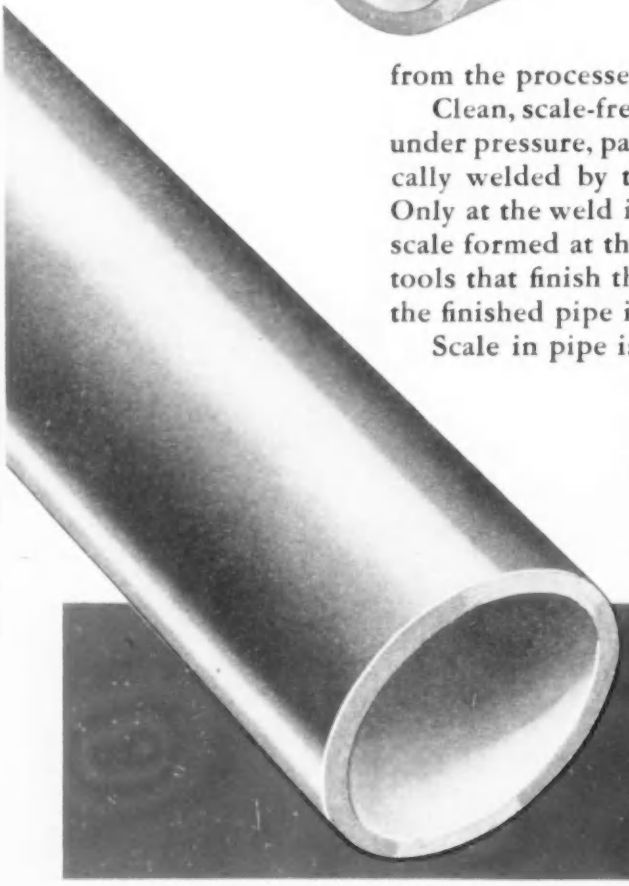
REPUBLIC ELECTRIC WELD PIPE IS MADE WITHOUT SCALE

This statement tells practically the whole story of the scale-free feature of Republic Electric Weld Pipe. There is no scale on the pipe, because it is made in a manner entirely different from the processes used in making other kinds of pipe.

Clean, scale-free steel strip is formed cold to a perfect round. The seam, under pressure, passes under two rotating circular electrodes and is electrically welded by the heat generated by the resistance of the steel itself. Only at the weld is the metal raised to a welding temperature. Any oxide scale formed at this point inside or outside is completely cut away by the tools that finish the weld to such a smoothness that locating the weld in the finished pipe is a difficult task.

Scale in pipe is often a nuisance. It clogs valves in line pipe. It cuts leathers in tubing. It accelerates corrosion in every type of service. So isn't it good judgment to steer clear of these possible difficulties by writing into your requisitions the name, Republic Electric Weld Pipe?

All the other features of this better pipe are fully described in Booklet 210-B. Write for a copy.



REPUBLIC STEEL
CORPORATION
GENERAL OFFICES: YOUNGSTOWN, OHIO

New Type Drive Pipe *Effective in Overcoming* Loose Surface Formations

FLOYD SWINDELL
Staff Representative

USE of a new type welded, slip-joint drive pipe in a well drilled in Barton County, Kansas, by Altantic Oil Producing Company has been instrumental in handling loose surface formations which are ordinarily troublesome during running of surface strings. A special drive nipple and bottom shoe were developed for handling the 20-inch drive pipe.

Before the advent of rotary tools the cable tool operator fought his way through these loose sands and shales with much difficulty and many times holes were lost either before surface pipe could be set or because of the improper setting of that string. As a means of getting through beds of this type the use of drive pipe was developed. This pipe, usually a thick-walled casing with ordinary screw type joints, is driven a joint at a time until the desired depth is reached. As each joint is put down a new connection must be made. The time required for this operation often was sufficient to permit freezing of the string.

In a test being drilled by Atlantic Oil Producing Company in Barton County, Kansas, operators set approximately 90 feet of drive pipe which differs in several respects from the pipe ordinarily used. A pipe of similar design is said to have been used in California. In the design under discussion five 10-foot joints of spiral-weld, mild carbon steel pipe were used, to make up the string which weighs approximately 80 pounds per foot assembled. Figure 1 is a diagramatic sketch showing a typical section of drive pipe with the drive nipple inserted but not set down into driving position. All pipe used in the typical section has a wall thickness of three-sixteenths of an inch and an inside diameter varying from 20 to 20⅜-inches. These lengths and dimensions may be varied to suit individual requirements. The smaller, or 20-inch I.D. pipe is inserted into the larger for a distance of three feet and four inches and spot welded into that position. Throughout this distance the typical section has a wall thickness of three-eighths of an inch. As will be seen the assembled string also has a wall thickness of three-eighths of an inch.

The drive nipple consists of a four-foot, four-inch section of 20-inch, I.D. pipe, a one-foot nipple of 20⅜-inch I.D. pipe, and a one-foot one-inch nipple of 20¾-inch I.D. pipe, all welded together. The outer nipple is beveled on the inside so that it acts as a guide. A one-inch hole is bored through each side of the drive nipple to facilitate handling.

Figure 2 is a diagramatic sketch of the bottom or shoe joint. Weight and dimensions of the pipe used in this joint are the same as in the typical section. Bottom of the joint is beveled at a 45-degree angle, forming a one-sixteenth-inch cutting surface. The inside nipple may be of any desired length so long as the interval between its top and top of the joint itself does not exceed the insert length of the typical section which in this case is three feet and four inches.

In setting a string of this type the drive nipple is inserted into the lower or shoe joint and that joint driven down either by action of the walking beam or by the use of a jerk line. The drive nipple is then removed and a typical 10-foot section inserted into the shoe joint. The drive nipple is reinserted and that joint driven down. From that point the string is made up of typical sections. As a precaution against dropping the lower joints in event of striking a crevice, the inside nipple on the typical section is struck in several places with a sharp pick, leaving a roughness which brings a tighter fit.

The design permits elimination of collars which in many instances may be directly responsible for the sticking or freezing of a string. It also permits considerably more speed as there are no screw joints . Usually it is not specifically desired that the surface string be water and gas tight. However, should a tight string be desired it can be obtained by welding at the joints or by slight changes in the type of joint.

The design is based on ideas furnished by W. A. Snyder, superintendent of production in Oklahoma and Kansas for Atlantic Oil Producing Company, and was perfected by representatives of American Rolling Mill Company. All pipe is fabricated, cut and welded in the company's plant at Middleton, Ohio.

R. E. Walker, field representative for American Rolling Mill Company, furnished data upon which the above description is based.

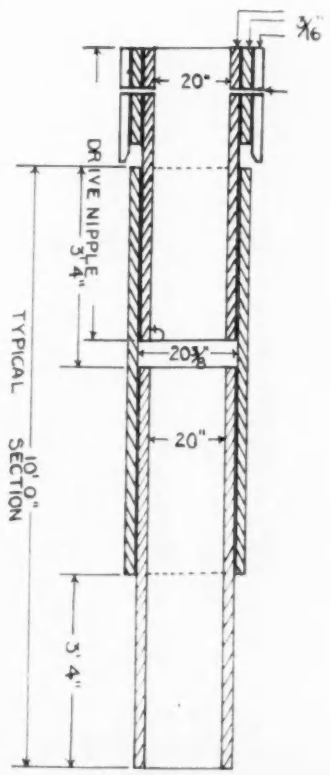


FIGURE 1

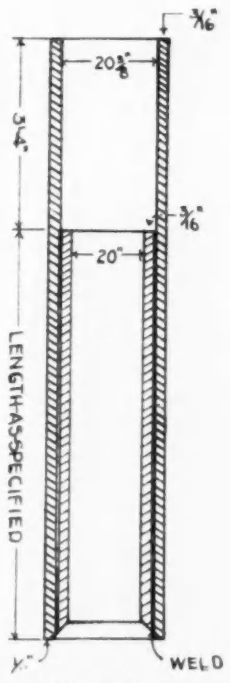


FIGURE 2

An Allocation Formula

Exhibit D of Progress Report of the Topical Committee of the American Petroleum Institute on Allocation of Production.

H. D. WILDE, JR.
Humble Oil & Refining Company.
Houston, Texas

Report of the chairman of the foregoing committee, to which the accompanying discussion is supplemental, appeared in THE OIL WEEKLY, February 12 (page 12); Supplement A, February 19 (page 26); Exhibit B. February 26 (page 24); Exhibit C, March 5 (page 26).

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In undertaking the assignment the writer realizes that to many people the very idea of a formula is objectionable, recalling unhappy hours spent in school on mathematics. But if such people will only consider that, after all, a formula is merely a short-hand way of expressing a definite idea—showing what factors are considered, how they are related, and what weight is given to each of them—formulas should lose this unpleasant aspect. As a matter of convenience in a formula, the factors are expressed as symbols or letters instead of words and sentences. The formula is, therefore, a brief, concise way of writing down the rules and regulations by which the ends sought may be achieved.

As pointed out in the report of the chairman, the committee believes equity in a prorated pool is attained when each tract is allowed to produce currently an amount of oil in proportion to the remaining recoverable reserves pertaining to the tract. In order to achieve this end the formula should include the productive area of the tract (which in the formula will be designated by the symbol **A**), the average net thickness of the producing formation underlying the tract (**H**), the relative current ability of the tract to produce oil through wells drilled on the tract (**P**), and the bottom-hole pressure of the tract (**B**). If the formula contains only these factors, there are likely to be specific cases in any field where the allowable fixed by the formula would be so small that the value of the oil produced would be insufficient to pay the daily operation cost. This would lead to the premature abandonment of wells so affected—leaving in the ground appreciable quantities of recoverable oil, thus causing physical waste. To avoid this the formula should also contain a factor (**M**) that would insure an amount of oil sufficient to pay a reasonable lifting cost.

The proposed formula combines these factors in the following manner:

$$V = M + c(A\sqrt{HP\,B})$$

The two symbols appearing in the formula not yet defined are **V**, the allowable in barrels per day, given to the tract in question, and **c**, a factor that converts the product in the parenthesis into barrels per day. The various factors and their relation to one another will now be discussed in greater detail.

FACTORS DEFINED

Daily Allowable

The daily allowable (**V**) is expressed in barrels per day, and applies to a proration unit or a well—depending upon the manner in which the field has been developed. In a number of fields the operators have decided by common agreement upon the average well spacing in terms of acres per well required to drain the field adequately. The field is then divided into proration units, each having an area equal to the spacing agreed upon. In such fields the allowable is granted to the unit, regardless of the number of wells on the unit—although in the vast majority of cases only one well is drilled on a unit. In rare cases a second well, or even a third well, may be drilled with the hope that it will be a larger well than the first; and, hence, increases the average potential (productivity) of the unit. The additional wells do not increase the allowance to the unit, except insofar as they may increase the average potential (productivity) of the unit; and in the event the additional well is smaller than the first one, it decreases the average potential of the unit, and reduces the allowable of the unit accordingly.

In other fields—where the wells are drilled without regard to any plan, but where the spacing depends largely upon the opinions or whims of the various operators—the acreage surrounding each well may be considered a tract, and assigned an allowable (**V**).

Minimum Allowance

The minimum allowance (**M**) is brought into the formula to insure to each operator a sufficient allowable to pay a reasonable daily operating cost or lifting cost for the unit

or well. The value of this minimum should be the same for all units or wells in the field, and should not vary as the total allowable for the field as a whole changes. In some states the minimum is already set by law or state regulations. In others the minimum to be used in a field should properly depend upon the average depth of wells in the field and average price of crude from the field, and would not change except with radical changes in crude price.

Since each unit (or well) participating in the proration plan is assigned a minimum allowance, a portion of the total field allowable is used in satisfying these minimum allowances. The remainder left by subtracting the product of the number of units (or wells) times the minimum allowance from the total field allowable is the amount that can be distributed between the units (or wells) in proportion to their recoverable reserves.

Area

If the field is developed with uniform spacing in accordance with a unit plan, the area (**A**) in the formula is the number of acres in the unit. In any field there will be fractional units or units with an area less than the normal, either because the total acreage of some leases is less than the normal unit or because the total acreage of the lease is not an even multiple of the unit acreage, and a fractional unit is left over in dividing the lease up into units. The area used in the formula, when applying it to fractional units, is the actual area of the unit. A unit or fractional unit without a well on it is not entitled to any allowance—although it may be desirable to permit a fractional unit with half or less than half the area of a normal unit to be combined with an adjoining unit or fractional unit, and the combined unit with only a single well on it be given credit for the total acreage.

On the other hand, in fields drilled with non-uniform and widely-varying spacing the area factor (**A**) would be the productive area of the tract divided by the number of wells on it. However, to prevent the operators of large tracts from getting credit for too much acreage without drilling, it would be well to specify that the acreage credit given to any well should not exceed some fixed ratio of the average number of acres per well in the field as a whole. Thus, for example, it might be stipulated that no well should receive an acreage credit of more than 1½ times the average acres per well in the field.

Referring to the formula, it will be noted that the second term varies directly with the area. Since the allowable is to vary with the recoverable reserve, the area should enter into the formula in this manner; for, obviously, if all the factors are equal, a tract having twice the area should have twice the recoverable reserve.

Thickness of Productive Zone

Since the allowables are to be based upon the recoverable reserve, the net formation thickness (**H**) should be one of the factors considered, and should enter into the formula as shown; for, if two tracts are equal in all other respects, the tract with twice the net formation thickness should have twice the recoverable reserve. The net thickness (**H**) is not the total distance between the top and bottom of the productive zone, but should be corrected for that portion of the formation filled with water or gas and for dense, nonporous layers, such as shale, containing no oil. Furthermore, if the porosity of the formation is not uniform over the field, corrections should be made for variations in porosity. Thus, for example, a foot of sand having a porosity half that of the average for the field would be given credit for a net thickness of a half foot and, conversely, a foot of sand with twice the average porosity would be given credit for a net thickness of two feet.

Admittedly, the net thickness (**H**) is a factor that cannot be measured accurately; but, nevertheless, a formula containing it is better than one in which it is ignored. The reason for using the square root of the net thickness can be best explained in connection with the discussion of this paper under the title "ability to produce." Where the net thickness varies over the field, the average value under the unit or under the acreage pertaining to the well should, insofar as possible, be used.

Ability to Produce or Productivity

If the allowables were to be based on the *total* reserves underlying a tract, the formula need consider only the area (**A**) and the thickness (**H**). But, since it is to be based on the *recoverable* reserves, the formula should contain a factor (**P**) reflecting the ability of the wells drilled on the tract to recover the oil underlying it. Recent studies of the question have indicated that the percentage of the oil that will be recovered under a given system of production depends upon—but is not directly proportional to—the bottom-hole pressure, the permeability of the formation, and the properties of the oil under reservoir conditions. Thus, if two tracts have the same amount of oil under them, the same oil characteristics, and the same pressure, but the permeability of one is four times that of the other, the one with the greater permeability will produce more oil, but not four times as much. Similarly, a tract with four times the oil fluidity, or four times the pressure, would produce more oil, but not four times as much. The percentage recovered appears to depend approximately on the square root of these factors; or, in other words, if the permeability is four times as great, the recovery will be double; if the fluidity is four times as great, the recovery will be double, etc. The bottom-hole pressure can easily be determined, but the permeability of the formation and the properties of the oil as it exists in the reservoir are hard to measure directly. However, the potential index or productivity factor depends directly upon these two factors, and also upon the net formation thickness. The potential index (**I**) is readily measured by measuring the bottom-hole pressure in the well after it has been shut in long enough for the pressure to become substantially equal to that in the formation feeding into the well, and again when it has been producing at a constant rate long enough for the flowing pressure to reach substantial equilibrium. The potential index (**I**) (productivity index) is computed by dividing the production rate in barrels per day by the difference between the shut-in and the flowing pressures. For the purpose of this paper, the product of the potential index (**I**) and the bottom-hole pressure (**B**) will be called the absolute potential (**P**). Since the percent recovery is proportional to the square root of the product of the bottom-hole pressure (**B**), the formation permeability (**K**), the proportionality factor (**k**), and the oil fluidity (**F**):

$$\text{Percent recovery} = k\sqrt{BKF};$$

and since the absolute potential (**P**) is directly proportional to the product of the bottom-hole pressure (**B**), the permeability (**K**), the oil fluidity (**F**), and the net thickness (**H**):

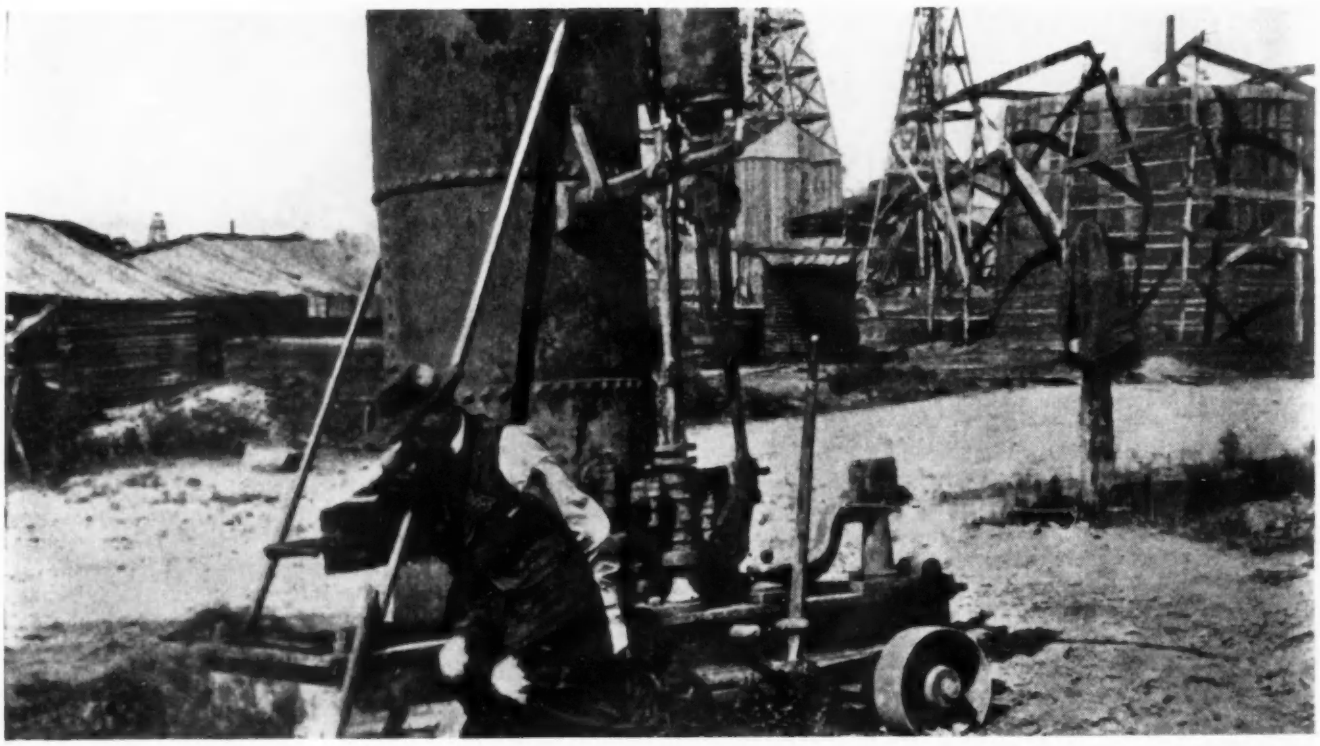
$$P = k(BKFH)$$

$$\sqrt{\frac{P}{H}} = k\sqrt{BKF}$$

the percent recovery should be directly proportional to $\sqrt{\frac{P}{H}}$. Thus, when **AH**, representing the total oil reserve, is multiplied by $\sqrt{\frac{P}{H}}$, representing the percent recoverable, the result $A\sqrt{HP}$ is proportional to the recoverable reserve under the tract.

Although it is felt that the absolute potential as defined

Picture of an OIL MAN ... not making money



AWAY back in 1869, this gentleman had decided there was no hope for the oil industry. He probably *thought* his antique engine was all right; he probably blamed his troubles on something else . . . but the fact remains he doesn't seem to be prospering.

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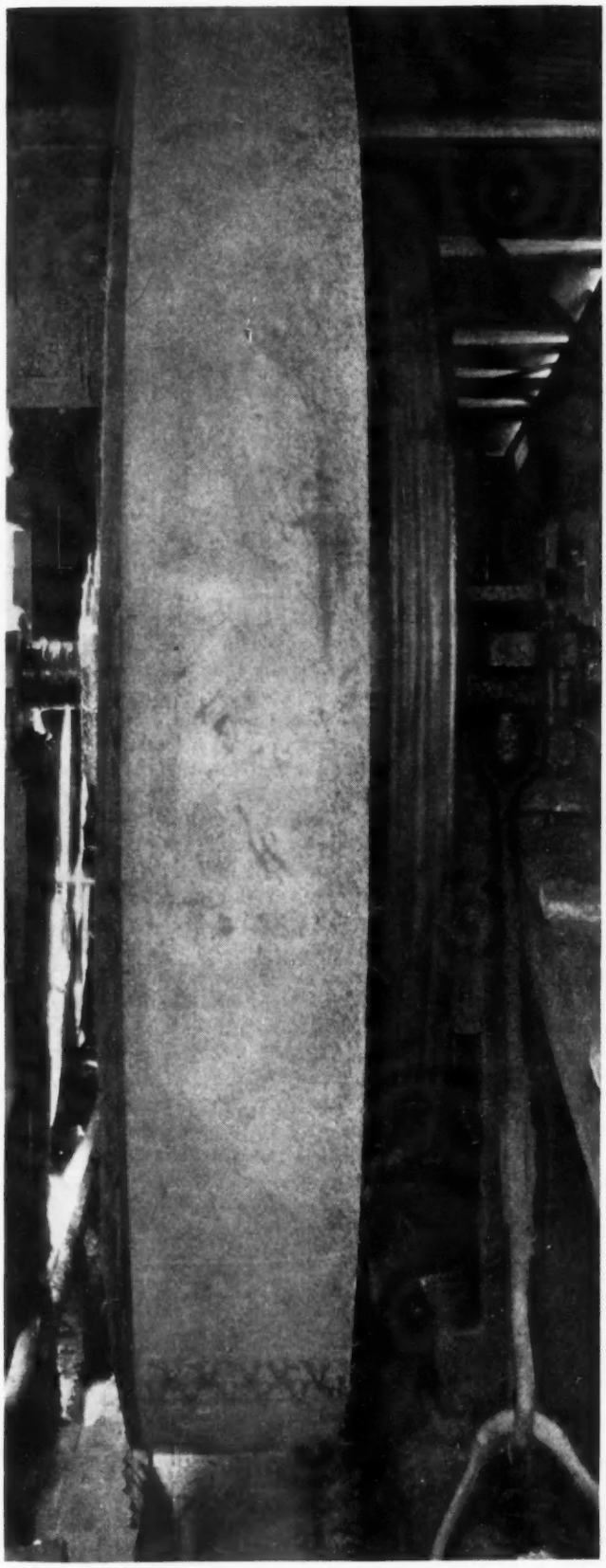
Don't take it for granted that your belt equipment is modern, and the most profitable for you. Let a Goodrich field representative help you *make sure* . . . The B. F. Goodrich Rubber Company, Mechanical Rubber Goods Division, Akron, Ohio.

Goodrich



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Highflex is specially designed and built to offer the greatest possible resistance to the wearing and cutting action of metal fasteners . . . or it can be made endless and so eliminate fasteners entirely.

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ALL *products problems* IN RUBBER

Highflex Belting

NRA MEMBER U.S. WE DO OUR PART

An Allocation Formula

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Admittedly, the net thickness **(H)** is a factor that cannot be measured accurately; but, nevertheless, a formula containing it is better than one in which it is ignored. The reason for using the square root of the net thickness can be best explained in connection with the discussion of this paper under the title "ability to produce." Where the net thickness varies over the field, the average value under the unit or under the acreage pertaining to the well should, insofar as possible, be used.

Ability to Produce or Productivity

If the allowables were to be based on the *total* reserves underlying a tract, the formula need consider only the area **(A)** and the thickness **(H)**. But, since it is to be based on the *recoverable* reserves, the formula should contain a factor **(P)** reflecting the ability of the wells drilled on the tract to recover the oil underlying it. Recent studies of the question have indicated that the percentage of the oil that will be recovered under a given system of production depends upon—but is not directly proportional to—the bottom-hole pressure, the permeability of the formation, and the properties of the oil under reservoir conditions. Thus, if two tracts have the same amount of oil under them, the same oil characteristics, and the same pressure, but the permeability of one is four times that of the other, the one with the greater permeability will produce more oil, but not four times as much. Similarly, a tract with four times the oil fluidity, or four times the pressure, would produce more oil, but not four times as much. The percentage recovered appears to depend approximately on the square root of these factors; or, in other words, if the permeability is four times as great, the recovery will be double; if the fluidity is four times as great, the recovery will be double, etc. The bottom-hole pressure can easily be determined, but the permeability of the formation and the properties of the oil as it exists in the reservoir are hard to measure directly. However, the potential index or productivity factor depends directly upon these two factors, and also upon the net formation thickness. The potential index **(I)** is readily measured by measuring the bottom-hole pressure in the well after it has been shut in long enough for the pressure to become substantially equal to that in the formation feeding into the well, and again when it has been producing at a constant rate long enough for the flowing pressure to reach substantial equilibrium. The potential index **(I)** (productivity index) is computed by dividing the production rate in barrels per day by the difference between the shut-in and the flowing pressures. For the purpose of this paper, the product of the potential index **(I)** and the bottom-hole pressure **(B)** will be called the absolute potential **(P)**. Since the percent recovery is proportional to the square root of the product of the bottom-hole pressure **(B)**, the formation permeability **(K)**, the proportionality factor **(k)**, and the oil fluidity **(F)**:

$$\text{Percent recovery} = k\sqrt{BKF};$$

and since the absolute potential **(P)** is directly proportional to the product of the bottom-hole pressure **(B)**, the permeability **(K)**, the oil fluidity **(F)**, and the net thickness **(H)**:

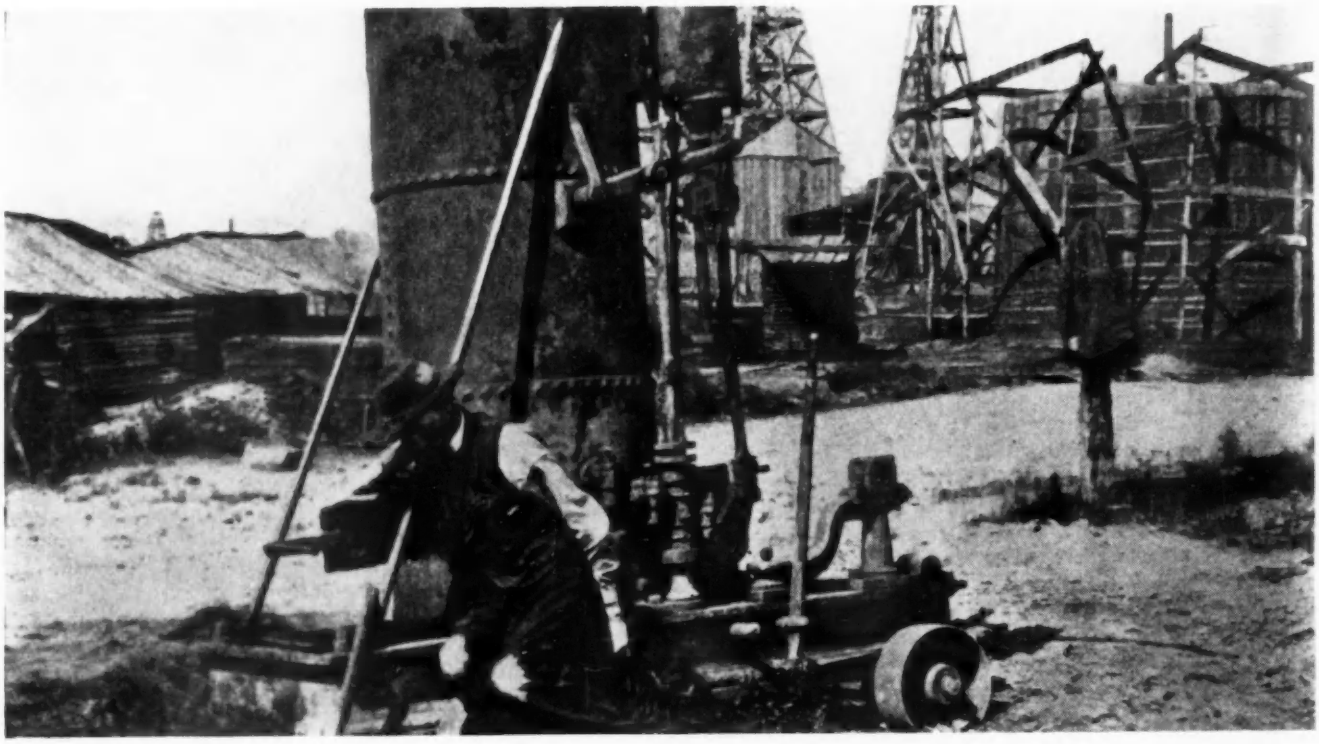
$$P = k(BKFH)$$

$$\sqrt{\frac{P}{H}} = k\sqrt{BKF}$$

the percent recovery should be directly proportional to $\sqrt{\frac{P}{H}}$. Thus, when **AH**, representing the total oil reserve, is multiplied by $\sqrt{\frac{P}{H}}$, representing the percent recoverable, the result $A\sqrt{HP}$ is proportional to the recoverable reserve under the tract.

Although it is felt that the absolute potential as defined

Picture of an OIL MAN ... not making money



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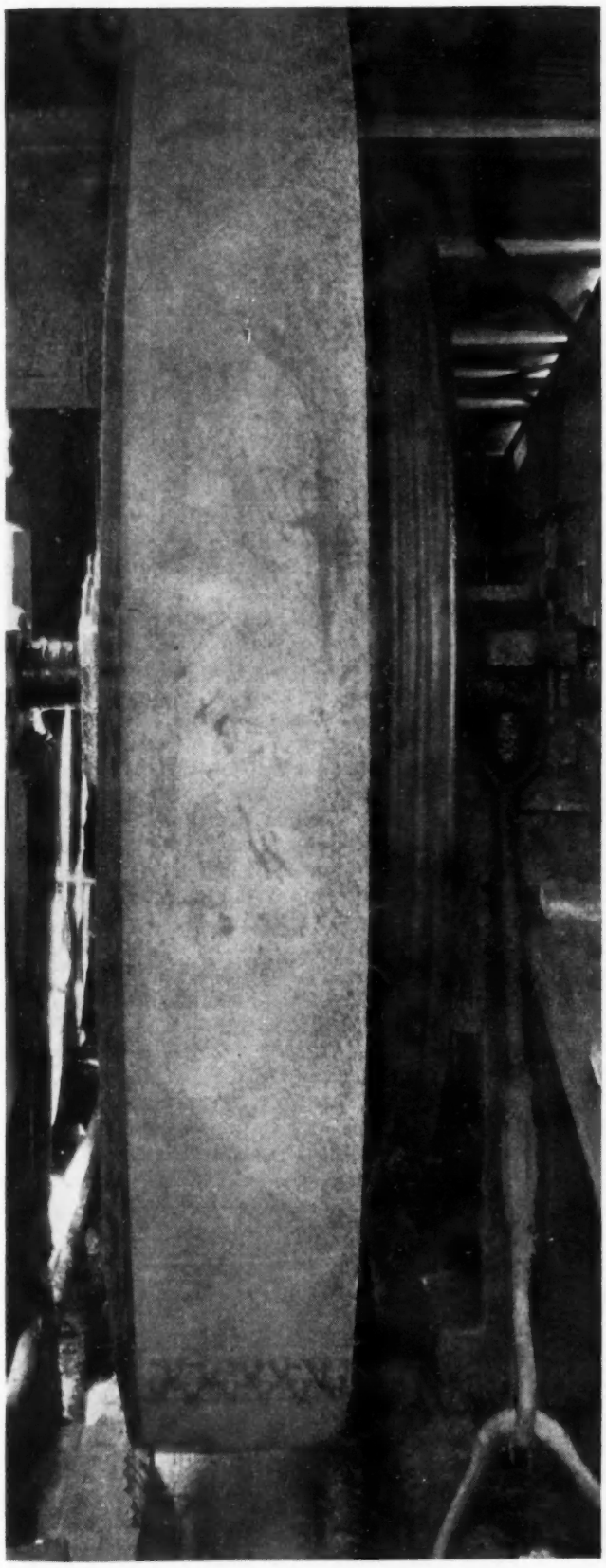

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above should be used wherever possible, there are fields where data on potential index (productivity index) are not available, but open-flow potentials have been measured. These open-flow potentials may be used for **P** instead of the absolute potentials for the sake of expediency, but the allocation of the allowables will not be as accurate as if absolute potentials had been used. Similarly, other potential tests, such as those taken through tubing or through chokes of definite size, may be substituted for absolute potentials if one is satisfied with a low degree of accuracy. In another paper in this series, R. B. Kelly goes into greater detail comparing the relative merits of various methods for arriving at the relative current abilities of wells to produce oil.

Bottom-Hole Pressure

As pointed out in the discussion under the title "ability to produce," the absolute potential depends upon the bottom-hole pressure **(B)**; and, hence, it may seem unnecessary to include it again separately. However, when included it serves a very useful purpose as a corrective factor. If one could be sure that the other factors had been properly weighted in setting out the formula, and that for any given tract they had been correctly evaluated, there would be no need to include it. If, however, for some reason or other a particular tract is given an allowable greater than it should be, the tendency would be for the pressure for that tract to fall more rapidly than the rest of the field. Then at the next allocation period, the allowance for the tract would be reduced because of the relatively lower pressure, and the new allowance would be more nearly in line than it had been. Similarly, if the allowance computed by the formula is smaller than it should be, the tract's pressure would tend to decline less than the rest of the field; and this relatively high pressure would increase the allowance at the next allocation period. If, however, the formula gave proper allowance to all tracts, pressures would be reduced evenly over the field, and the use of this factor would have no effect on the allowances.

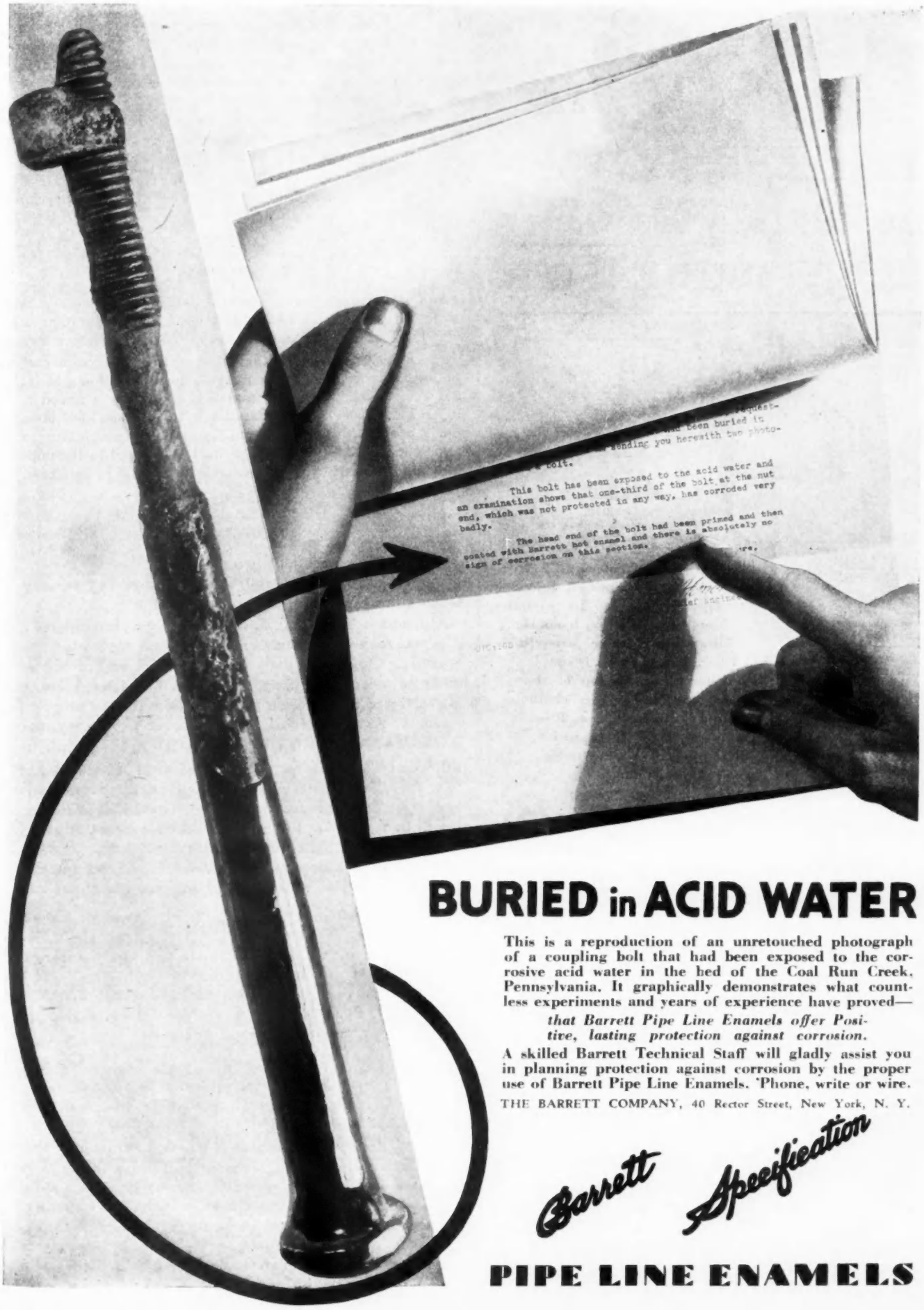
Conversion Factor

The allowable **(V)** is expressed in barrels per day. The minimum allowance **(M)** is also expressed in barrels per day, so that it becomes necessary to convert the product $\mathbf{A\sqrt{HB}\,B}$ in terms of barrels per day. Ordinarily, this product is a very large number, and is a mixture of acres, feet, pounds, and barrels. By multiplying this product by the conversion factor (c) it is converted to barrels per day. For any given total field allowable **c** is constant for all units or wells in the field, but increases or decreases as the total allowable for the field increases or decreases.

Numerical Example

In order to illustrate how the value of **c** is computed, as well as to illustrate the application of the formula in general, a numerical example will be given. Suppose a field drilled with a uniform spacing in accordance with a unit proration plan contains 100 wells and is given a total field allowable of 10,500 bbl. per day, and the problem is to calculate the allowable given to a unit having an area **(A)** of 20 acres, a net sand thickness **(H)** of 50 ft., a bottom-hole pressure **(B)** of 1000 lb. per sq. in., and a potential index **(I)** of 5 bbl. per day per lb., difference in pressure between the shut-in and flowing bottom-hole pressure. The conditions in the field are such that the average income from 15 bbl. per day is just sufficient to pay the average operating cost for each proration unit and, consequently, the minimum allowance **(M)** for this field is set at 15:—

Since the absolute potential **(P)** is the product of the potential index times the bottom-hole pressure, the potential **(P)** for the unit in question is $5\times1000=5000$. Consequently, for this unit $\mathbf{A\sqrt{HP}\,B}=20\sqrt{50\times5000}\quad 1000=$


This bolt has been exposed to the acid water and
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10,000,000. Furthermore, let us assume that when this product is computed for each of the units in the field, the sum of all such products is 1,500,000,000. There are 100 proration units, each receiving a minimum allowance of 15 bbl., so that the sum of the minimum allowances for the field is 1500 bbl. When this is subtracted from the total allowable of 10,500 bbl., the remainder of 9000 bbl. per day is to be distributed in proportion to the remaining recoverable reserves. In order to find the value of **c**, this figure of 9000 bbl. per day is divided by the sum of $A\sqrt{HP}B$ products for all units in the field; and, consequently, for this example

$$c = \frac{9{,}000}{1{,}500{,}000{,}000} = 0.000006.$$

All of the terms entering into the formula have now been evaluated, so that the allowable for the unit in question is: $V = 15 + 0.000006\ (10{,}000{,}000) = 15 + 60 = 75$ bbl. per day.

In order to show how the value of the conversion constant (**c**) is affected by changes in the total allowable for the field, assume that the total field allowable is raised to 13,500 bbl. per day. The first step is to subtract 1,500 bbls., the the sum of the minimum unit allowances, leaving a remainder of 12,000 bbl. per day to be allocated to the units proportionally with the recoverable reserves. In this case:

$$c = \frac{12{,}000}{1{,}500{,}000{,}000} = 0.000008.$$

The allowable to the unit becomes:
$V = 15 + 0.000008\ (10{,}000{,}000) = 15 + 80 = 95$ bbl. per day.

Other Formulas

Although it is felt that, in the light of our present knowledge, the proposed formula gives the closest approach to the principles adopted by the committee, there are, of course, other formulas that will approach these principles; but such formulas are not as close approximations as the proposed formula. As a matter of convenience or expediency, one may use **APB** or **AHB** instead of $A\sqrt{HP}B$, but the results will not be as close to those desired as if $A\sqrt{HP}B$ had been used. It is quite possible that when the physics and mechanics of oil production are understood with certainty, it will be found that the proposed formula is not an exact one; but, in the light of our present knowledge, it is believed that it is a close approximation of the exact one, and that the exact one will not differ seriously from the one proposed.

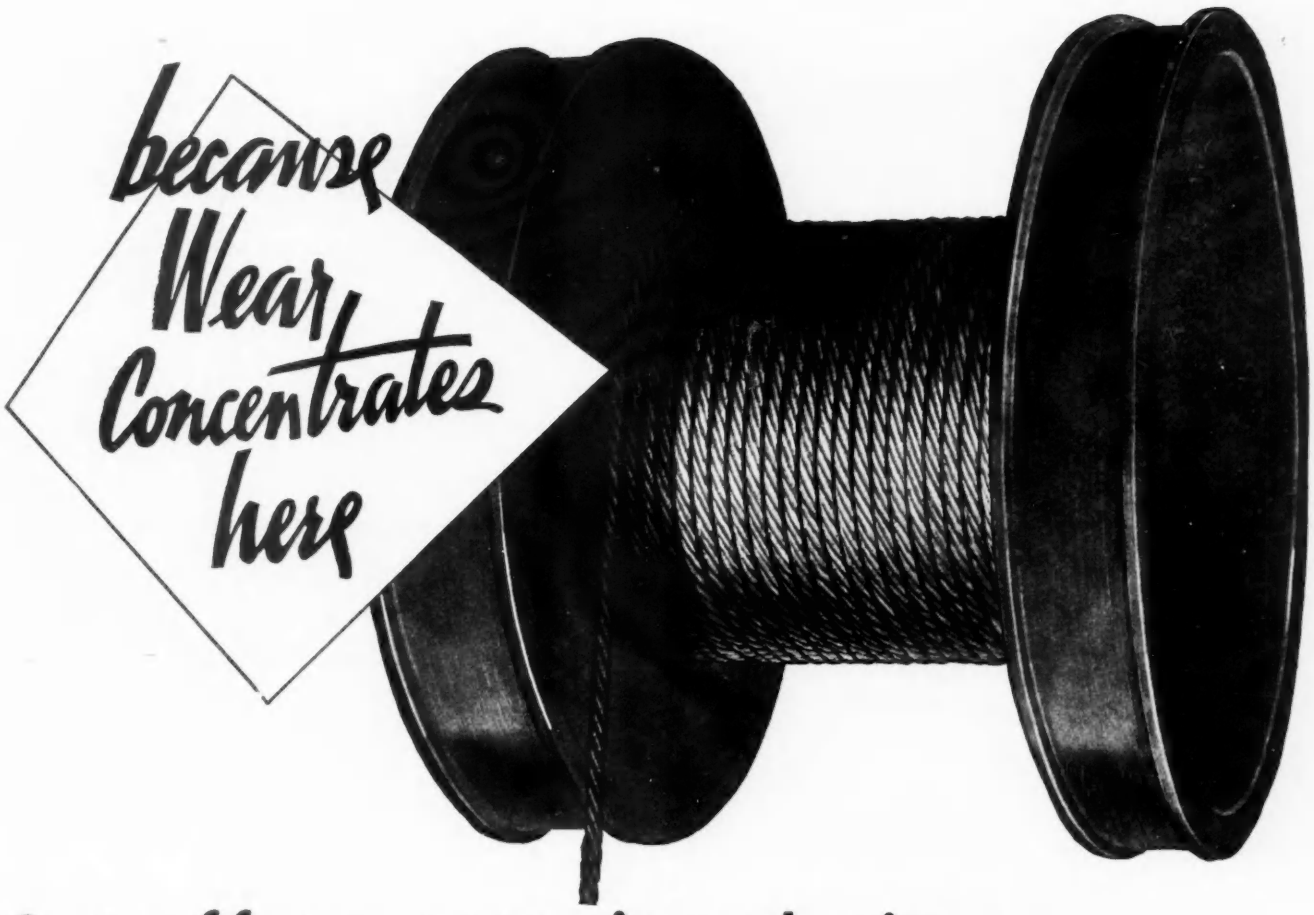
DISCUSSION

M. E. Wagner (Mid-Continent Oil and Gas Company): Is permeability affected by the size of the hole?

Mr. Wilde: The diameter of the hole would affect the productivity value. I think it would be essential that the various wells have the same diameter.

Mr. Wagner: Would the formula take into consideration the difference in the size of the hole to determine the allowable of a given well?

Mr. Wilde: The formula as it stands does not take that into consideration. If all wells were drilled with the same size hole, no correction would be necessary. As an added refinement, a correction could be made. The committee felt that it should not make any attempt to formulate specific rules that would apply to any field, but merely to present guiding principles to aid in the formulation of a proration plan. If, for any field, it is considered necessary



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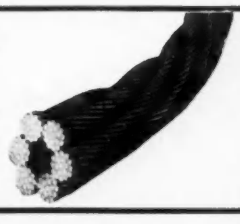

to correct for variations in the diameter of the hole, that could be included.

M. G. Cheney (Anzac Oil Corporation): Would you recommend an open-flow potential where wells are small? Does not an open-flow potential express all in one a number of factors which you have considered separately in the formula?

Mr. Wilde: Do you mean a pumping well, or one where the flow is small?

Mr. Cheney: Where the capacity is small, such as a 50- or 100-bbl. well. Would you recommend bottom-hole-pressure measurements for determination of productivity?

Mr. Wilde: Where the capacity of a field may be too small to warrant bottom-hole measurements, productivity might be determined by other means. I did not discuss productivity measurements, as a paper has been prepared on that subject which will be presented later. All of these remarks regarding the factors involved are in the light of the best information we now have, and are subject to modification as we get better information. As far as we know now, productivity may best be determined by sub-surface measurements. The next best is some actual potential test on the well, which may not be as good, but may be good enough to serve.

If the field is so small, or if the production of a well is so small, that it does not pay to employ bottom-hole-pressure measurements, some other method can be used. I think that even in the small wells the ability to produce is measured better by sub-surface-pressure measurements than by open-flow potential. In fact, unless artificial means of lifting the oil are employed, rather great discrepancies might enter in—where the wells are just on the border line of flowing or not flowing. One well may not produce at all, and the other does produce; whereas, actually, both wells may have nearly the same ability to produce at the face of the sand. In such a case by open flow one well may be a thousand times better than the other, because it produces 100 bbl. a day, and the other can produce only a tenth of a barrel a day; whereas their actual abilities to produce, as determined on the pump, may be nearly the same.

The measurements of the ability to produce resulting from sub-surface-pressure measurements should be closer to the true values than just a potential test as generally made.

Stanley Gill (Houston, Texas): I want to clarify one idea I have in mind. Is not the net effect of the formulas that of giving rather great consideration to oil in place in comparison to productivity? That is, in considering the term "static bottom-hole pressure," it is in effect, as you say, merely a corrective factor. It acts in the formula in the same way as the computation of ratio between the bottom-hole pressure in the given well and the average bottom-hole pressure for the field. What I particularly refer to is the effect of **A** times the square root of **P**, which is the same as the productivity of oil in place times the square root of the productivity per foot of sand thickness.

Mr. Wilde: That is not productivity per foot of sand thickness, but for the entire thickness.

Mr. Gill: The total productivity would be the productivity per foot of sand thickness times the sand thickness.

Mr. Wilde: You would have to get that by getting the total oil produced in the test and then dividing by sand thickness.

Mr. Gill: If we call the productivity per foot of sand thickness **P'**, **P'H** is equal to the **P** which you have used. Then the term becomes **A** times the square root of **HP'H**, that in turn gives **A H**, which is a measure of oil in place, times the square root of the productivity per foot of sand thicknes. In other words, eliminating **B**, or bottom-hole pressure, from the formula:

Where $P'H = P$

$$A\sqrt{HP'H} = AH\sqrt{P'}$$

Mr. Wilde: It does do that, but that was made in that form in order to conform to the principle laid down: that the allowable should be proportional to the remaining recoverable reserves. The **AH** represents the remaining reserves, and the $B\sqrt{P'}$ converts it over to recoverable remaining reserves. Your quarrel may be with the principle adopted by the committee.

Mr. Gill: I am not quarreling with it. I just want to get it clear in my mind.

Chairman Wood: The aim of this formula or any formula combining these factors was, first, to avoid drainage of oil from one property to another, due to disproportionate allowance; and, second, to give each property an opportunity to produce its recoverable reserves.

In other words, it has been attempted to place proration on a basis of performance of wells, taking into consideration recoverable reserves underneath the properties on which those wells are located.

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MARKETS — STATISTICS

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Current Market Outlook Is Marred by Uncertainties

WHILE there were favorable influences at work during the past week as regards market conditions in the oil industry, such influences could not overshadow some disturbing factors, and consequently the outlook toward the end of the week was one of uncertainty, with prices for both crude oil and refined products lacking in firmness for the most part.

Influences of favorable nature included strengthening of Texas laws for controlling "hot" oil production through signing of three oil bills by the governor late in the week; further progress toward inauguration of the long-debated gasoline pooling and marketing agreements under the NIRA, through which it is hoped gasoline prices will be stabilized at satisfactory levels; and the approach of spring, with its expected increase of gasoline consumption.

Factors of unfavorable nature included lack of definite assurance that "hot" oil will be eliminated in Texas, despite the new state laws; continued uncertainty as to the legality of the petroleum code and the oil administrator's regulations, with an adverse district court decision on the code and the regulations pending before the United States Supreme Court; and persisting gasoline price wars in California and parts of the Mid-Continent.

"Hot" Oil

Although recorded crude oil production during the past week was only slightly above the national allowable, the actual output was substantially higher, considering that much "hot" oil was being produced in the meantime, particularly in Texas. Illegal production in East Texas was reported running around 75,000 barrels daily, while several additional thousands of barrels was believed to be getting onto the market from the Conroe field.

Produced in a district where there are about 50 small refineries, the excessive East Texas production, offered at subposted prices, and converted largely into underpriced third-grade gasoline, has been wreaking havoc with the wholesale gasoline market in Texas, with the weakness of prices spreading also to filling stations in Texas. Other parts of the Mid-Continent have also felt the influence of the Texas disturbance to the extent that gasoline and other refined products have suffered declines in price.

THE OIL WEEKLY

Estimated Average Daily Crude Oil Production, Barrels

District or State	Week Ending March 10	March 3
TEXAS—		
Texas Panhandle	56,900	52,315
North and West Central Texas	83,000	85,400
West Texas	128,000	124,000
East Central Texas	43,000	43,200
East Texas Field	419,000	418,000
South Texas	45,000	43,000
Texas Gulf Coast	160,500	164,000
Total Texas	935,400	929,915
OKLAHOMA—		
Oklahoma City	170,885	109,560
Seminole Area	115,300	109,645
Tatums	4,360	5,755
Lucien	8,150	6,350
Others	178,200	172,740
Total Oklahoma	476,895	404,050
KANSAS—		
Ritz-Canton	13,190	12,405
Voshell	6,615	7,275
Nikkel-Hollow	13,325	10,365
Sedgwick	6,750	6,465
Others	73,785	76,460
Total Kansas	113,465	112,970
LOUISIANA—		
North Louisiana	27,100	28,300
Louisiana Gulf Coast	44,250	44,500
Total Louisiana	71,350	72,800
ARKANSAS	28,250	30,550
CALIFORNIA—		
Long Beach	63,200	53,000
Santa Fe Springs	43,000	40,300
Huntington Beach	41,000	35,500
Dominguez	17,000	16,200
Inglewood	9,400	8,300
Ventura Avenue	31,400	30,500
Seal Beach	8,700	8,200
Midway-Sunset	52,000	50,000
Elwood	11,500	14,000
Kettleman Hills	45,300	49,000
Playa del Rey	9,400	8,500
Others	136,100	118,500
Total California	466,000	432,000
MOUNTAIN STATES—		
Wyoming	31,000	30,500
Montana	7,000	5,850
Colorado	2,700	2,750
Total Rocky Mountain States	40,700	39,100
NEW MEXICO	43,500	41,500
EASTERN STATES	90,000	92,500
MICHIGAN	29,500	28,500
Total United States	2,295,060	2,183,885

One of the three new Texas laws makes refiners subject to strict regulation by the railroad commission, and it is hoped that with the commission having access to reports and records of the East Texas refiners "hot" oil production there will be reduced; although it is conceded that court attacks against the new law are likely, with possibility that plaintiffs will obtain injunctions against the commission and continue at least for several months to operate free of interference by government agents, pending decision on the validity of the law.

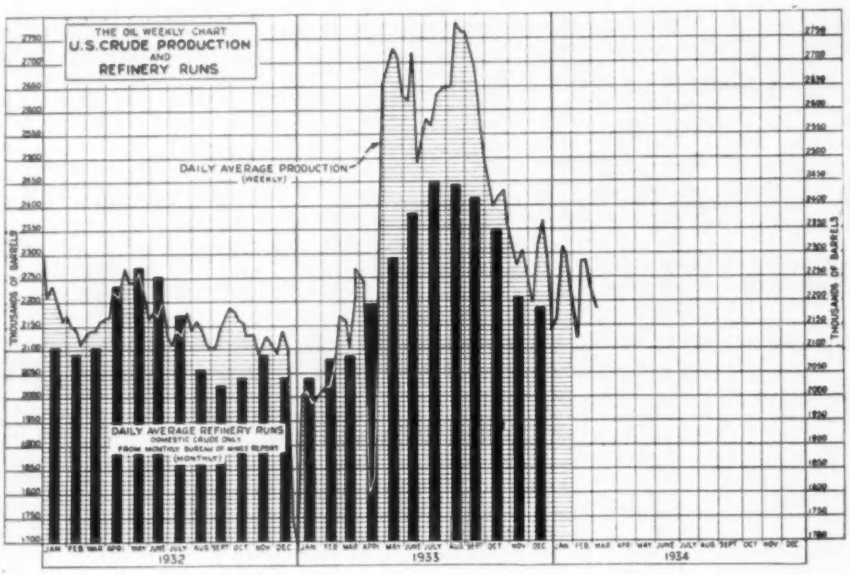
Even before the new laws were placed in effect through being signed by the Texas governor, East Texas refiners had formed an organization designed to stabilize gasoline prices at higher levels; and during the week retail prices for third-grade gasoline had been raised in some of the Texas cities, the rise in Houston, for example, being to 14 cents from 10 cents, inclusive of five cents state and federal tax.

United States Production Increases Sharply

REFLECTING the important increase in the nation's allowable as of March 1, United States crude oil production rose sharply during the week ending March 10, having averaged 2,295,060 barrels daily, compared with 2,183,885 barrels per day the previous week. The 112,000-barrel increase was fairly well in line with the enlargement of the allowable, which on March 1 was raised approximately 100,000 barrels, or to 2,282,800 barrels daily. Thus output in the week of March 10 was about 12,000 barrels above the allowable, the previous week's average having coincided almost exactly with the old allowable.

Texas production was below the allowable for that state, having averaged 935,400 barrels, compared with a 947,900-barrel quota. However, the state was credited with additional unreported production of about 75,000 barrels in the form of "hot" oil, coming mainly from the East Texas field, although Conroe is indicated to have supplied a few thousand barrels of "hot" oil daily.

Material reduction of Texas "hot" oil



is expected, however, in consequence of the governor of the state having signed late in the past week three oil bills which were recently passed by two-thirds majorities in the legislature and which were consequently effective immediately upon being signed by the executive. The new laws will increase the income of the railroad commission for proration enforcement, provide felony penalties for violations of the oil laws and commission's orders, and permit the commission to closely regulate refineries, which have been charged with taking much of the "hot" oil in East Texas.

Oklahoma was 20,000 barrels above its new allowable during the week of March 10 in averaging 476,895 barrels daily, but its output the previous week had been barely above 400,000 barrels daily, and so the increase was in the form of compensation.

California similarly compensated for underproduction the preceding week, having averaged 466,000 barrels daily in the new week, compared with a new allowable of 453,900 barrels daily, but previous week's output of only 432,000 barrels per day.

How Production Compares with Federal Allocation

		Week Ending March 10[1]		4 Weeks, March 3[2]	
	Allocation February	Daily Average		Daily Average	
Arkansas	32,200	28,250	−3,950	31,250	−950
California	453,900	466,000	+12,100	448,950	−4,950
Kansas	112,300	113,465	+1,165	111,050	−1,250
Louisiana	71,800	71,350	−450	73,400	+1,600
Texas	947,900	935,400	−12,500	919,350	−28,550
Oklahoma	456,400	476,895	+20,495	461,250	+4,850
New Mexico	44,300	43,500	−800	41,600	−2,700
Rocky Mountain	39,500	40,700	+1,200	39,250	−250
Appalachian States	95,200	90,000	−5,200	91,250	−3,950
Michigan	29,300	29,500	+200	28,350	−950
United States	2,282,800	2,295,060	+12,260	2,245,700	−37,100
Imports crude and fuel oil				127,714	
Crude to Stills[2]				2,377,500	

[1]Oil Weekly estimate for current week. [2]A.P.I. estimate.

Oklahoma Market Remains Unsteady

OUTCOME of the East Texas refining situation was the major controlling factor in the Mid-Continent market during the past week as interest lagged in practically all commodities. Changeable weather may be charged with having a slight influence, and continued conjecture regarding the federal pooling and marketing agreement remains very much in the picture. Otherwise, conditions in the market point upward with the approach of a season of normally increasing demand.

Lower prices were especially noted in natural gasolines, distillates, recycle stocks, zero and near zero gas oils and other products suitable for domestic heating purposes. Natural gasoline buying was spotty, with the principal demand in odd carload lots going to northern jobbers who were using it for blending purposes.

Agricultural activity in the lower Mississippi valley area was thought to be responsible for a slight pick-up in kerosenes with prices trending slightly higher. Bright stocks, steam refined cylinder stock and neutrals were reported steady, with prices remaining at the levels established during the preceding week. Industrial gas oils also remained stationary and movement was confined to small lots.

Ruling prices, based on Group 3, Oklahoma, and exclusive of federal tax, appeared to be as follows:

Refinery Gasolines: Low octane, third grade, 59 or under octane rating, U. S. motor gasoline 3½ to 3⅝ cents a gallon; middle octane, 60 to 64 octane rating, 4 to 4½ cents; high octane, 65 and above octane rating, 4½ to 4¾ cents; 60/62 gravity, 400 endpoint, 3⅝ to 3¾ cents; 64/66, 390 ep., 3¾ to 3⅞ cents; 64/66, 375 ep., 3¾ to 3⅞ cents; 68/70, 360 ep., 3⅞ to 4⅛ cents.

Natural Gasolines: The stabilized 11/14 pound vapor grade, 4 to 4¼ cents; 16/18 pound vapor, 3¾ to 3⅞ cents; 18/22 pound vapor, 3⅛ to 3¼ cents; 22/26 grade, 2⅝ to 2¾ cents; 26/70 grade, 2¼ to 2⅜ cents.

Kerosenes: The 41/43 gravity, water-white, doctor, corrosion, under 150 flash, under 550 endpoint, 2⅞ to 3⅛ cents; 42/44 gravity, 3⅛ to 3¼ cents; 44/46 gravity, 3½ to 3¾ cents a gallon.

Distillates: Prime white color, zero, under 175 flash, under 600 endpoint, distillate, 2¾ to 2⅞ cents; 38/40 gravity, light straw, 2½ to 2⅝ cents; 36/38 gravity, light straw, zero, 2½ to 2⅝ cents.

Crude Runs to Stills, Motor Fuel Stocks, Gas and Fuel Oil Stocks and Cracked Gasoline Production, As Reported by A.P.I. for Week Ended March 3, 1934

(Figures in barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		MOTOR FUEL STOCKS				Gas and Fuel Oil Stocks	Daily Charging Capacity of Cracking Units			Cracked Production Daily Average
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Transit & Pipe Lines	(a) Other M. F. Stocks	Total Motor Fuel		Potential Rate	Reporting		
		Total	%									Total	%	
East Coast	582,000	582,000	100.0	478,000	82.1	6,553,000	10,123,000	149,000	16,825,000	4,742,000	496,500	471,500	95.0	66,000
Appalachian	150,800	139,700	92.6	82,000	58.7	1,364,000	514,000	87,000	1,965,000	753,000	68,600	68,600	100.0	20,000
Indiana, Illinois, Kentucky	436,600	425,000	97.3	291,000	68.5	5,417,000	3,120,000	59,000	8,596,000	3,304,000	325,300	308,000	94.7	86,000
Oklahoma, Kansas, Missouri	462,100	379,500	82.1	192,000	50.6	3,745,000	1,824,000	365,000	5,934,000	3,127,000	255,800	234,000	91.5	43,000
Inland Texas	274,400	165,100	60.2	77,000	46.6	1,031,000	117,000	207,000	1,355,000	1,583,000	81,900	65,700	80.2	23,000
Texas Gulf	537,500	527,500	98.1	464,000	88.0	5,011,000	220,000	124,000	5,355,000	4,882,000	358,400	348,900	97.3	92,000
Louisiana Gulf	162,000	162,000	100.0	110,000	67.9	933,000	870,000		1,803,000	1,283,000	70,600	70,600	100.0	19,000
North Louisiana, Arkansas	82,600	76,500	92.6	40,000	52.3	228,000	40,000	32,000	300,000	646,000	41,500	38,500	92.8	9,000
Rocky Mountain	80,700	63,600	78.8	21,000	33.0	1,032,000		29,000	1,061,000	711,000	45,800	42,500	92.8	5,000
California	848,200	821,800	96.9	450,000	54.8	7,249,000	3,922,000	2,458,000	13,629,000	86,961,000	208,600	208,600	100.0	36,000
TOTALS WEEK: March 3, 1934	3,616,900	3,342,700	92.4	2,205,000	66.0	32,563,000	20,750,000	3,510,000	56,823,000	107,992,000	1,953,000	1,856,900	95.1	399,000
February 24, 1934	3,616,900	3,342,700	92.4	2,287,000	68.4	32,060,000	20,441,000	3,475,000	55,976,000	108,912,000	1,953,000	1,856,900	95.1	428,000
Below are set out estimates of Crude Runs and Motor Fuel Stocks on B. of M. Basis for Week March 3, 1934, compared with certain March 1933 Bureau figures.														
Estimate B. of M. Basis Week March 3, 1934				2,345,000		(b)	(b)	(b)	(b)					450,000
Estimate B. of M. Basis Week February 24, 1934				2,425,000		(b)	(b)	(b)	(b)					480,000
U. S. B. of M. March 1933 Figures:					3/1	35,652,000	19,732,000	3,397,000	58,781,000					
March 1933 Daily Average Crude Runs				2,193,000	3/31	36,882,000	20,126,000	3,548,000	60,556,000	March 1933 Daily Average Cracked Prod.				440,000

(a) Estimated. Includes unblended Natural Gasoline at refineries and plants; also blended Motor Fuel at plants.
(b) Because of the many changes made by companies in their method of reporting stocks to the American Petroleum Institute, it has been decided to discontinue our attempt at estimating Motor Fuel stocks figures on a Bureau of Mines basis until further notice.

Gasoline Price War Again on in California

RETAIL prices of gasoline were reduced with a vengeance in Southern California the morning of March 6. Shell Oil Company led off by reducing third grade to 11.5 cents. Regular grade was cut to 13 cents and Ethyl is two cents higher. Other companies fell into line.

Independents are selling gasoline in the southern part of the state at prices ranging from 9.9 cents to 11.5 cents, the average being 10.5 cents.

Several reasons are advanced for the price war. Wishes on the part of two or three smaller companies for gallonage before the cartel goes into effect, is the first reason. Ability of price cutting small refiners to move their fuel oil at fair prices is another. Still another reason is the idea that the cartel will not accomplish its expectations.

Larger companies are refusing to buy the crude produced at Playa del Rey, throwing a certain amount of crude into the spot market. Some "hot oil" is moving out of Huntington Beach, Long Beach and Mountain View. It is doubted if there is more than 3000 to 4000 barrels of crude daily moving on spot sales, and only a very small part of this at less than posted prices.

The price war is gradually spreading to other parts of the state, and has been the cause of rumors that crude prices are to be reduced. Those in close touch with the situation do not expect a crude cut, at least for the present, since the production situation is in better shape than for a long time.

Daily production in California on February 28 was down to 396,000 barrels, the low mark for more than 10 years, except the few days following the earthquake when several Los Angeles Basin fields were closed in to survey the damages and make repairs. But March started off with a lower production than for either January or February.

Here is the production record for the first two days of each month for

Summary of Field Results During Past Week

State—	Completions	Oil wells	Gas wells	Failures	Init. Prod.
Arkansas	1	1	0	0	50
California	3	3	0	0	1,380
Colorado	1	0	0	1	0
Kansas	15	9	1	5	6,979
Louisiana	13	6	0	7	2,085
Michigan	11	6	1	4	1,095
Ohio	6	4	0	2	50
Oklahoma	31	18	0	13	10,531
Pennsylvania	2	1	0	1	30
Texas	179	137	6	46	485,173
West Virginia	7	1	4	2	5
Total	269	186	12	81	507,378

Comparison of Permits Granted for New Wells

State	Week ending Mar. 10	Total this month	Total this year	Total this date last year	1933 year total
Arkansas	0	1	11	25	47
California	10	22	92	43	593
Louisiana	24	29	134	74	755
Kansas	15	31	147	81	682
Michigan	9	16	88	45	420
Oklahoma	52	87	362	172	1,315
Texas	176	491	1,672	1,136	7,845
Total	286	677	2,506	1,576	11,651

Crude Petroleum Stocks Reported by Companies Holding 100,000 Barrels or More

GRADE OF CRUDE OIL	Stocks held by reporting companies Feb. 24, 1934 (Barrels)	Stocks held by reporting companies Mar. 3, 1934 (Barrels)	Change from Feb. 24, 1934 (Barrels)
Pennsylvania Grade	5,124,000	4,973,000	−151,000
Other Appalachian, including Ky	1,313,000	1,303,000	−10,000
Lima-N. E. Indiana-Michigan	1,616,000	1,599,000	−17,000
Illinois-S. W. Indiana	11,150,000	11,176,000	+26,000
N. Louisiana and Arkansas	11,512,000	11,477,000	−35,000
West Texas and S. E. New Mexico	31,130,000	30,482,000	−648,000
East Texas	43,785,000	43,921,000	+186,000
Other Mid-Continent	153,735,000	153,222,000	−503,000
Gulf Coast	15,727,000	15,739,000	+12,000
Rocky Mountain	27,381,000	27,452,000	+71,000
California	33,752,000	33,860,000	+108.000
Total domestic crude	336,225,000	335,204,000	−1,021,000
Foreign crude	3,478,000	3,912,000	+434.000
Total crude	339,703,000	339,116,000	−587,000

the past three months, in round figures:

	Jan.	Feb.	Mar.
First day	453,000	466,000	448,000
Second day	465,000	479,000	465,000

Good demand for fuel oil, a more stable production situation, withdrawals from stocks each month and the small number of new oil wells completed during the past few weeks indicate a splendid statistical condition, but the gasoline price war goes steadily on its way.

It has been expected the cartel for the Pacific Coast would become effective March 1, but the anti-trust case in California in 1930, resulting in an agreed injunction, caused Secretary Ickes to refer the cartel to the attorney general's department for an opinion. The matter was discussed with President Roosevelt March 5, and decision delayed. It is now doubted if the cartel goes into effect before March 10, if then.

There is still another fly in the ointment. Concerns which signed control 95 percent of the gallonage of the Pacific Coast states, including Hawaii and Alaska. Signers of the cartel control practically all of the gasoline sold in the areas mentioned outside of California. This leaves the five percent out of the cartel selling almost entirely in Southern California, which is sufficient to wreck the market without any great effort.

Practically no surplus gasoline is now being purchased by the majors, as had been the practice until recently, and which had a stabilizing effect. One key to a cut price market is natural gasoline, and most of this product in California is being purchased on long time contracts, until there is very little on the spot market. The little to be had is moving at 5 to 7 cents a gallon.

Legislation Would Force Separate Ownership

Washington.—Legislation designed to correct conditions under the oil code which he declared "permit the big syndicates to disregard the code, raise the price of crude oil and gasoline and drive the independents out of business," was introduced in congress March 8 by Senator Borah of Idaho.

The legislation was contained in two measures, under which oil producers, refiners and marketers would be prohibited from owning or controlling pipe line companies, either through stock ownership or interlocking directorates, and would prohibit pipe line companies from transporting oil or its products produced by companies in which they have an interest.

Discussing his bill, the Senator declared that two investigators sent to Nebraska to study conditions there had reported they could accomplish nothing under existing law. "I do not blame the Secretary of the Interior," he explained. "I believe he is helpless under present law, and the bills I am offering are to correct the law."

Senator Borah read to the senate a letter from a Nebraska filling station operator who declared he had been driven out of business since adoption of the code because "the big syndicates have raised the price of crude oil from 10 cents to $1.00 a barrel and gasoline at the refineries costs three times what it did a year ago.

"They are using the big profits under the code to drive the independents out of business," the letter charged. "They disregard the code except as it helps them."

Today's Picture in Oil

(Continued from page 8)

To the credit of the recovery program, however, the tabulation indicates that in their relation to the average price for all commodities the petroleum products were in better position in January, 1934, than in the corresponding month of 1933, 1932, and 1931, although not in such good position as in January, 1930. Thus in January, 1934, the index price for petroleum products was within 70 percent of the index for all commodities; in January, 1933, it had been only within 63 percent; in January, 1932, merely 57 percent; in January, 1931, 64 percent; but in January, 1930, petroleum product prices were within 73 percent of the general average.

Recession

The record for oil was not so good in January, 1934, however, as in earlier periods of the recovery program. For petroleum product prices in January stood only at 51.1, compared with 51.6 in December; whereas the January average for all commodities was up to 72.2 compared with merely 70.8 in December.

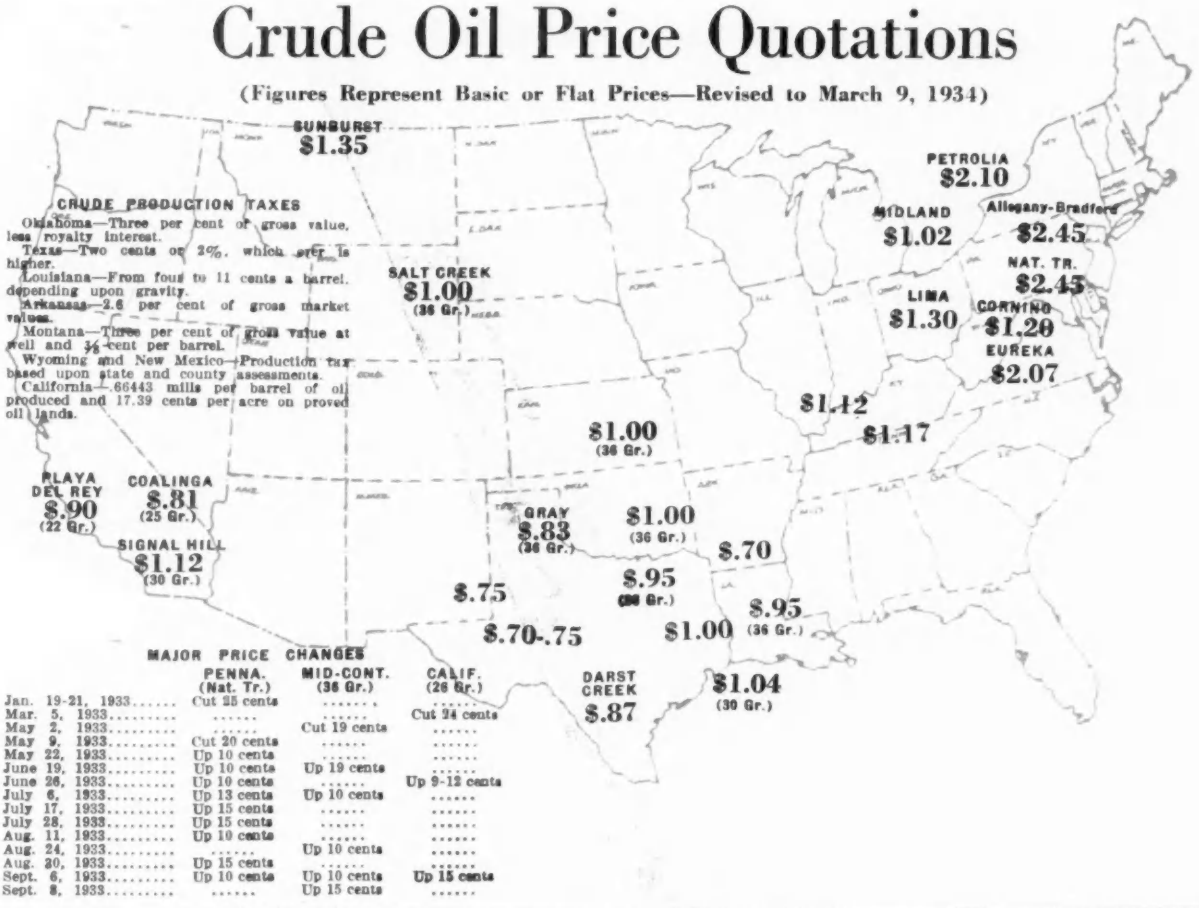
The index figures given in the tabulation for petroleum products were as follows: 51.1 for January, 1934; 51.6 for December, 1933; 38.7 for January, 1933; 38.8 for January, 1932; 50.4 for January, 1931; and 67.3 for January, 1930. For all commodities the numbers were thus: 72.2 for January, 1934; 70.8 for December, 1933; 61.0 for January, 1933; 67.3 for January, 1932; 78.2 for January, 1931; and 92.5 for January, 1930.

Pennsylvania Grade Meeting Dates Changed

The meeting dates of the annual convention of the Pennsylvania Grade Crude Oil Association have been changed to June 14 and 15 instead of June 28 and 29 as was announced earlier. The meeting will be held at State College, Pennsylvania.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices—Revised to March 9, 1934)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two cents or 2%, which ever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 per cent of gross market values.

Montana—Three per cent of gross value at well and ⅓ cent per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
Jan. 19-21, 1933	Cut 25 cents	.....	.....
Mar. 5, 1933	.....	.....	Cut 24 cents
May 2, 1933	.....	Cut 19 cents	.....
May 9, 1933	Cut 20 cents	.....	.....
May 22, 1933	Up 10 cents	.....	.....
June 19, 1933	Up 10 cents	Up 19 cents	.....
June 26, 1933	Up 10 cents	.....	Up 9-12 cents
July 6, 1933	Up 13 cents	Up 10 cents	.....
July 17, 1933	Up 15 cents	.....	.....
July 28, 1933	Up 15 cents	.....	.....
Aug. 11, 1933	Up 10 cents	.....	.....
Aug. 24, 1933	.....	Up 10 cents	.....
Aug. 30, 1933	Up 15 cents	.....	.....
Sept. 6, 1933	Up 10 cents	Up 10 cents	Up 15 cents
Sept. 8, 1933	.....	Up 15 cents	.....

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$ .84	2¢	40—$1.08	9-29-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-29-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-29-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-29-33
West Texas				
Ector, Pecos, Wk'lr, Crane, Upton, Howard and Glasscock	*.75			9-29-33
	*.70			9-29-33
East Texas	*1.00			9-29-33
Texas Gulf Coast				
Conroe	35— 1.09	2¢	40— 1.19	9-29-33
Tomball	*1.15			9-29-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull, Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-29-33
South and SW Texas	Below			
Refugio (Light)	20— .82	2¢	34— 1.12	9-29-33
Refugio (Heavy)	.85			9-29-33
Saxet	*.85			9-29-33
Mirando	*.80			9-29-33
Pettus	*1.05			9-29-33
Salt Flat	*.87			9-29-33
Darst Creek	*.87			9-29-33
Arkansas				
El Dorado (Light) and Rainbow	29— .75	2¢	40— 1.07	9-29-33
El Dorado East Field and Smackover	*.70			9-29-33
North Louisiana	29— .79	2¢	40— 1.03	9-29-33
Urania	*.85-*.87			1- 1-34
South Louisiana	Below			
Lockport	20— .80	2¢	34— 1.10	9-29-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-29-33
Rocky Mountain States				
Salt Creek	29— .84	2¢	40— 1.08	9-29-33

*All gravities—flat rate.
†Gulf Coast prices as posted by Humble Oil & Refining Company

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Flk Basin	$*1.17			9-29-33
Grass Creek (Light)	*1.17			9-29-33
Big Muddy	*1.01			9-29-33
Rock Creek	*1.02			9-29-33
Sunburst	*1.35			9-29-33
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*.45			8-25-33
Pondera	*.65			8-25-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	*.75			9-29-33
Mid-West States				
Lima	*1.30			9-29-33
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.17			9-29-33
California				
Signal Hill	14— .65	1¢	16—$ .66	9- 6-33
	17— .69	3¢	22— .84	9- 6-33
	23— .88	3¢	30— 1.09	9- 6-33
Sea B., Alamitos Hts.	19— .65	3¢	20— .68	9- 6-33
	21— .72	4¢	22— .76	9- 6-33
	23— .81	4¢	26— .93	9- 6-33
	27— .98	4¢	30— 1.10	9- 6-33
Huntington Beach	14— .65	4¢	15— .69	9- 6-33
	16— .72	3¢	19— .81	9- 6-33
	20— .83	3¢	28— 1.07	9- 6-33
	29— 1.09	3¢	30— 1.12	9- 6-33
Inglewood	14— .65	4¢	16— .73	9- 6-33
	17— .76	4¢	18— .80	9- 6-33
	19— .83	4¢	20— .87	9- 6-33
	21— .90	4¢	22— .94	9- 6-33
	23— .97	4¢	24— 1.01	9- 6-33
Playa del Rey	14— .65	1¢	15— .66	9- 6-33
	16— .69	4¢	17— .73	9- 6-33
	18— .76	4¢	19— .80	9- 6-33
	20— .83	4¢	21— .87	9- 6-33
	22— .90	4¢	23— .94	9- 6-33
	24— .97	3¢	25— 1.00	9- 6-33
			26— 1.04	9- 6-33
Olinda-Brea Canon	14— .65	4¢	16— .73	9- 6-33
	17— .76	3¢	28— 1.10	9- 6-33
Athens-Rosecrau Domingues	23— .83	3¢	24— .86	9- 6-33
	25— .90	4¢	26— 94	9- 6-33
	27— .97	3¢	29— 1.04	9- 6-33
	30— 1.08	4¢	31— 1.12	9- 6-33
			32— 1.15	9- 6-33
Elwood (fob ship.)	3— 1.03	3¢	37— 1.15	9- 6-33
Torrance	1'— .65	1¢	15— .66	9- 6-33
	16— .69	3¢	20— .81	9- 6-33
	21— .83	3¢	26— .98	9- 6-33

*All gravities—flat rate.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Richfield	15—$ .65	2¢	16—$ .67	9- 6-33
	17— .70	4¢	20— .82	9- 6-33
	21— .85	4¢	22— .89	9- 6-33
	23— .93	4¢	24— .97	9- 6-33
	25— 1.00	4¢	27— 1.08	9- 6-33
	28— 1.11	4¢	29— 1.15	9- 6-33
Whittier-LaHabra	15— .65	3¢	18— .74	9- 6-33
	19— .78	3¢	24— .93	9- 6-33
Montebello	19— .65	1¢	20— .66	9- 6-33
	21— .69	3¢	22— .72	9- 6-33
	23— .76	4¢	24— .80	9- 6-33
	25— .85	4¢	26— .89	9- 6-33
Coyote Hills	16— .65	3¢	19— .74	9- 6-33
	20— .78	3¢	29— 1.05	9- 6-33
	30— 1.09	3¢	34— 1.21	9- 6-33
Santa Fe Springs	21— .72	4¢	22— .76	9- 6-33
	23— .79	4¢	25— .87	9- 6-33
	26— .90	4¢	28— .98	9- 6-33
	29— 1.01	4¢	30— 1.05	9- 6-33
	31— 1.08	4¢	33— 1.16	9- 6-33
	34— 1.19	4¢	35— 1.23	9- 6-33
	36— 1.26	4¢	38— 1.34	9- 6-33
New Hall, McKittrick, Kern River	14— .57		19— .57	9- 6-33
Midway, Sunset, Elk Hills, BuenaVista Hills	17— .57	4¢	18— .61	9- 6-33
	19— .64	3¢	22— .73	9- 6-33
	23— .77	4¢	33— 1.17	9- 6-33
Lost Hills	17— .57	4¢	21— .73	9- 6-33
	22— .76	3¢	30— 1.00	9- 6-33
Coalinga	17— .57	1¢	18— .58	9- 6-33
	19— .62	3¢	21— .68	9- 6-33
	22— .72	3¢	25— .81	9- 6-33
Wheeler Ridge	17— .57	1¢	18— .58	9- 6-33
	19— .61	3¢	25— .79	9- 6-33
Kettleman Hills	33— .93	3¢	39— 1.11	9- 3-33
Pennsylvania				
Bradford	*2.45			10- 4-33
Sw Pa. Pipe Line	*2.12			10- 4-33
Eureka Pipe Line	*2.07			10- 4-33
Buckeye Pipe Line	*1.97			1-29-34
Corning Grade	*1.20			9-11-33
Michigan				
Central Michigan	*1.02			9-30-33
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

*All gravities—flat rate.

The New
BRIDGEPORT DRILL COLLAR

The ultimate in weight—stiffness—strength and safety for straight hole drilling.

30 FEET LONG

CHROME NICKEL STEEL

COMPLETELY *and* UNIFORMLY HEAT-TREATED

(Heat-treated the entire length at one operation.)

As weight and stiffness are prime requisites in a Drill Collar, our collars are constructed with the largest practical outside diameter.

We also manufacture and distribute Forged Steel Fully Normalized Drill Collars. Both types are carried in stock in 20-foot, 24-foot and 30-foot lengths.

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MANUFACTURERS DISTRIBUTORS
OIL DRILLING-FISHING AND PRODUCTION EQUIPMENT
GENERAL OFFICE AND WORKS: WICHITA, KANSAS
BRANCH STORES: ACTIVE MID-CONTINENT AND GULF COAST FIELDS

Sales Offices: **Houston, Dallas, Oklahoma City and Tulsa**

MEN IN THE INDUSTRY'S NEWS

J. A. CRAWFORD, Floyd Merritt, D. S. Faulkner and E. S. Dulin, California officials of American Petroleum Equipment suppliers Association, were in Washington, D. C., to attend meetings with code authorities, held March 5 to 8.

H. A. SCHAEFFER, manager in California for Hughes Tool Company, is being congratulated over the arrival of a son, his first.

LOCK McDANIELS, who was connected with Reed Roller Bit Company for years, and who made more than one foreign trip for the company, is now with Republic Supply Company in California.

H. GREEN, age 35 years, foreman of a Western Pipe & Steel Company tank building crew in California, is dead of injuries sustained when a company truck skidded over an embankment and overturned. He was working at Kettleman Hills.

MARK L. REQUA, of Santa Barbara, California, was discharged from a Los Angeles hospital March 1, following an operation, and will return to his home next week.

DOUGLAS JOHNSON, Ph.D., D.Sc., professor of physiography in Columbia University, will present a series of public lectures with illustrations in color in the physics amphitheatre of Rice Institute, Houston, at 8:15 p.m. March 13, 14, and 15, and an invitation has been extended to the public to attend. The March 13 lecture will be on the Grand Canyon district, that of March 14 on evolution of the Atlantic shoreline, and the March 15 lecture on a physiographic traverse of the United States.

MELVIN DeGROOTE, chief chemist for Tretolite Company, has returned to St. Louis headquarters after spending some time in the company's Los Angeles plant.

MICHAEL D. CUMMINGS, 83, of Waynesburg, Pa., one of America's pioneer oil men and who, as a boy, witnessed the drilling of the first oil well near Titusville, Pa., died at his home on March 3. He recently suffered a paralytic stroke. Mr. Cummings worked in the country's first oil fields around Titusville and Oil City and later went to southwestern Pennsylvania. He superintended the laying of the first oil lines in Greene County and was an employe of Standard Oil Company for 20 years.

FRANK B. TAYLOR, JR., who has been located at Panhandle-Eastern Pipe Line Company's Louisburg, Kansas, station, has been transferred to Stinnett, Texas.

J. S. LEHMANN, president, Tretolite Company, was a recent visitor in Los Angeles, where he attended a company meeting.

ALEXANDER G. PAGE, for 17 years manager of refineries for the Union Oil Company of California, died in Los Angeles March 1, aged 64 years. Three years ago he retired from his active refinery duties and since that time has acted in an advisory capacity to the president of the company. He is survived by his widow, three sons and a daughter.

C. E. LEE, who has been district superintendent in the Gulf Coast area for Shell Petroleum Corporation, has been made drilling superintendent for the company at Houston. Mr. Lee joined the company 17 years ago as production foreman in Oklahoma and has served continuously with the exception of one year spent in the army. He came to Breckenridge in 1920. After spending one year there he was transferred to Haynesville, where he spent the next two years. Mr. Lee's next move was to Corsicana, from which district he came to the Gulf Coast.

C. E. LEE

JACK BALLAGH of Patterson-Ballagh Corporation has returned to Los Angeles after an extended visit to the Texas-Louisiana Gulf Coast section, where he visited operators in the interest of Patterson-Ballagh protectors.

W. HUNTER ATHA, JR., manager of Atha Supply Company, Mt. Pleasant, Michigan, left for St. Petersburg, Florida, this week for an indefinite stay.

JACK LEWIS, formerly chief scout for Barnsdall Oil Company in California, has assumed the position of head of the land and scouting department of Wilshire Oil Company, with headquarters in Los Angeles.

K. R. KINGSBURY arrived in Los Angeles March 5 by steamer from the Atlantic Coast. He had been on a business trip to Eastern points and was accompanied by Mrs. Kingsbury.

J. W. LOVE was elected president of the Mississippi Oil & Gas Association, at an organization meeting recently. Other officers elected were: Joseph A. Baker, vice president; Robert L. Steffey, secretary, and S. B. Lawrence, treasurer. The board of directors chosen follows: Messrs. Love and Baker, J. A. Roell, S. S. Taylor, D. M. Yelverton, J. B. Stirling, George B. Hightower, Wilson McGuire and Mr. Steffey.

H. A. MELAT, retired superintendent of production for the Gulf Production Company and now a resident of Wichita Falls, passed through Fort Worth, his former home, last week en route home after looking over several properties in Southwest Texas. He has solved the problem as to what a superintendent shall do with his spare time after reaching the age limit and pension stage by engaging in the oil producing business on a small scale.

TOM E. CRANFILL, successful operator and outstanding leader among independent oil men in Texas for a number of years, died March 6 at a hospital in Dallas from a series of complications that arose from an emergency appendicitis operation experienced earlier in the year. Shortly before being stricken he had liquidated his oil holdings, except for valuable properties held in the East Texas field jointly with E. B. Germany and operated as C. & G. Oil Company

TOM E. CRANFILL

and considerable wildcat acreage held by Mustang Oil Company. He had amassed a sizeable fortune, and was preparing to taper off on his business activities and travel extensively.

As first president of the Independent Petroleum Association of Texas, Cranfill championed the cause of the independents on proration and legislative matters pertaining to the regulation of the oil industry. He served as president for two years, and withdrew from active participation in the organization because of failing health. Fortified with a keen mind and an abundance of humor he was always in demand as a speaker at a gathering of operators.

Cranfill was a native Texan, having been born in Turnersville, a small hamlet in Coryell County, on August 23, 1881. His public school education was topped off with several terms at Baylor University, Waco, but he did not wait to graduate before yielding to the temptation to affiliate himself with the oil industry at Spindletop. He was on hand shortly after other important oil strikes were made over the state to participate as an employe, broker and operator, but found time to line up a profitable real estate business during the lulls between discoveries. He hit his stride when the series of fields made their appearance in the Mexia fault line district about 13 years ago, and profits made largely from these operations formed the basis of the Cranfill-Reynolds Company. He held control of the latter until late last year when majority of the stock was acquired by the Pew estate.

Survivors include his wife, four daughters and one son.

Funeral services were held from the family residence March 7, with many oil men from distant cities of the state attending.

E. H. SALRIN, first vice president of Tide Water Oil Company, left Houston last week for a business trip to New York. Enroute he will stop over in Tulsa for a few days.

R. B. WHITEHEAD, chief geologist for Atlantic Oil Production Company, Dallas, was visiting in Houston and conferring with the employees and officials. He will return shortly to Dallas.

MILTON H. KNOX, district scout for Kirby Petroleum Company, was recently transferred to Beaumont. He was moved from Corrigan where he was stationed by the company.

ALFRED FARMER, chief production engineer for the International Petroleum Company, Standard Oil subsidiary, was killed in an explosion that occurred at Negritos, Peru, on March 2. Mr. Farmer was a graduate of Baylor University. Besides his wife he is survived by his mother and several brothers and sisters.

JOHN W. HERBERT III, president of Herbert Oil Company with headquarters at Fort Worth, Texas, departed last week for New York City immediately after receiving word of the serious illness of a member of his family in the latter city.

HARRY MACK, engineer with Sunray Oil Company, Tulsa, Oklahoma, was a recent visitor in Houston.

A. M. McCORKLE, vice president of Stanolind Oil and Gas Company, has been elected chairman of the Hobbs proration committee. G. N. Larson, of The California Company, was retained as secretary of the committee.

H. O. CASTER, member of the executive department of Henry L. Doherty and Company and president of American Gas Association, was a recent Oklahoma visitor. He spoke before the Oklahoma Utilities Association at Tulsa.

FRANK SHAFFER, vice president for Shaffer Petroleum Company of Tulsa, died during the week in Greeley, Colorado. Shaffer, who was 66 years old, spent many years in the oil business, including activities in the fields of Ohio, Indiana, Kansas, Colorado, and Oklahoma. He was a native of Oil City, Pennsylvania.

PETE SWEARINGEN, formerly in the sales department of Oil Well Supply Company, has opened an office in Tulsa and will represent Mountain Iron and Supply Company of Parkersburg, West Virginia.

C. A. FISCHER, president of the C. A. Fischer Company of Fort Worth, spent most of the week in the Oklahoma City and Seminole districts.

W. L. TIPTON, member of the legal staff and executive department of Oklahoma Oil Company of Okmulgee, is reported well on the road to recovery after an operation.

JOHN L. SHAKELEY, vice president of Frick-Reid Supply Corporation and chairman of the Mid-Continent division of the code authority of the American Petroleum Equipment Suppliers Association, is spending several weeks in Washington conferring on code matters.

Dinner Honors Suman in Conroe Well Killing

Houston.—More than 100 oil men, friends of John R. Suman, vice president of Humble Oil & Refining Company, were guests on the evening of March 3 at a party given in honor of Suman by George Strake, discoverer of the Conroe field, to celebrate the killing of the cratered well at Conroe a short time ago.

When Humble Oil & Refining Company was endeavoring to kill the cratered well by means of a relief well aimed at the bottom of the crater well, Strake told Suman that if he were successful he would give Suman a dinner to celebrate the feat.

"May I invite a few of my friends?" asked Suman.

"Sure," replied Strake, "as many as you like."

A short time after the well was killed Strake called Suman and reminded him of the dinner.

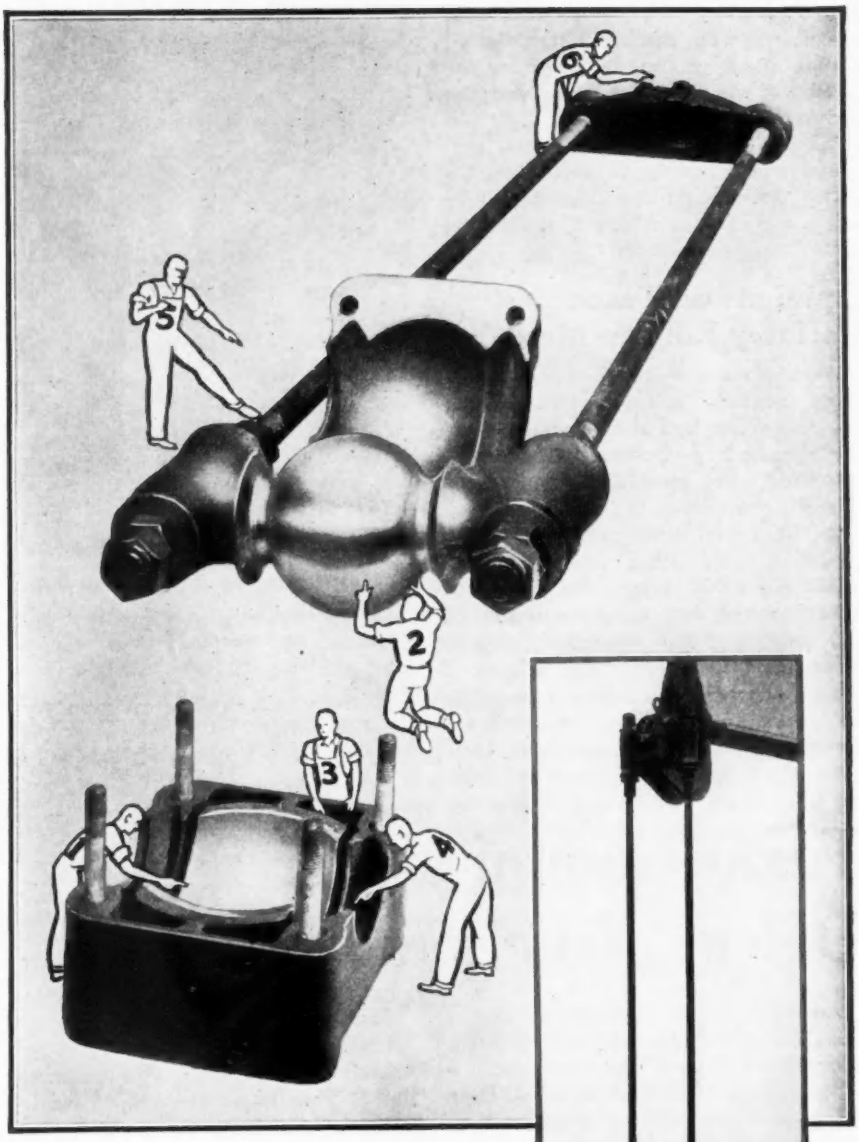
"All right, I'll send you over the names of my friends I want invited," Suman replied.

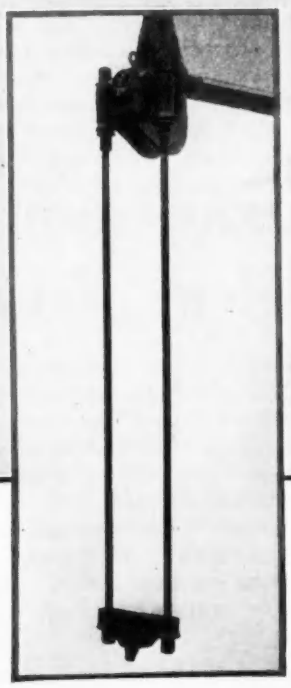
There were 130 names on the list.

Short addresses were attempted by Suman, John Eastman, who directed the diverted hole, George Strake, and George Sears who were officially on the program and by many others not scheduled for speeches!

A series of cartoons showing the effects of Dr. Suman's famous "Cur-oil," guaranteed to cure anything from a bad golf score to a cratered well, was shown on the screen. Music was furnished by Walter Jenkins and John Bonner, officially, and by 128 other soloists attempting to sing in chorus.

Note STRENGTH *and* SIMPLICITY *of this* BEAM HANGER





The Moore Type 20 Beam Hanger is built for heavy duty, having a capacity of 20,000 pounds. The oil bath bearing (1), with self-aligning sphere (2), has a projected area of 34.5 square inches. Oil reservoirs (3) and water seal (4) are simple and effective. The reins (5) are of 1½" or 2" diameter hot rolled steel rods. Other parts are of cast steel. The wedge type clamp (6) has a positive and easily removed latch.

Other Moore beam hangers, Type 10 and Type 30 series, complete a line of hangers which meets all field requirements. Write for details.

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Bills Giving Texas Commission More Power Signed by Governor
(Continued from page 9)

proved all three of said house bills. Let us indulge in the hope that with the new powers conferred that the oil business will yet be stabilized for the benefit of the state and the industry as a whole."

The railroad commission has prepared and is ready to distribute the forms on which these reports will be required. Prompt action all along the line has been assured.

Opinions on Texas Refinery Bill Are Aired

Austin, Texas.—East Texas oil operators came to Austin in force during the past week, and at two public hearings granted by Governor Miriam A. Ferguson, they aired their opinions of the bill enacted at the recently called session of the legislature that is designed to permit the Texas Railroad Commission to inspect the books of refineries and determine the source of the oil used. Proponents of the bill were heard on Tuesday and urged the Governor to sign the measure and thus bridge the final gap in proration enforcement. They declared that their only purpose was to prevent the running of "hot oil" from the East Texas field.

Those opposed to the bill appeared on Thursday. Protests against the bill centered around charges that major companies were seeking to crush the independent refiner, and that the effect of the bill would be to throw out of work some 3000 men employed in refineries.

This group of 176 consisted largely of laboring men, some of whom are now employed in refineries and others who are on the relief rolls but hope to obtain some sort of work. Representatives of 26 of the smaller refineries in the field were in attendance.

Shepherded by Carl Estes, Tyler newspaper man, the first group was received by Governor Miriam A. Ferguson and her husband James E. Ferguson, former governor, who acts as her principal advisor.

At the Governor's request, husband James outlined the situation as "they" saw it. He declared that three bills affecting the oil industry were awaiting signatures, but that only one presented any serious problem. The bill to increase the enforcement fund available for the Railroad Commission and another which corrects the oil felony statutes were simple matters.

Ferguson explained that reports required of refineries were not public information to be made available to competitors, and that the choice of the refineries to be inspected was left to the discretion of the Railroad Commission. He exhibited a petition to which he said were appended some 1500 names of workers who would be out of a job if the bill was signed.

Fred W. Weeks, Tyler attorney, who has recently been appointed assistant counsel to the Texas Petroleum Council, explained the legal aspects of the bill to the Governor. He declared that the disposition of this bill would seriously affect the entire oil industry of Texas, and perhaps that of the nation as well.

"There has never been proration in East Texas," Weeks said. He explanied that some 300 violators had prevented the enforcement of the proration program which has been in effect. He declared that this was the problem to be solved. The proration statutes have been passed and tested in the courts, he pointed out, and this bill is essential to insure their enforcement.

"We need this to check the source of oil used by these refineries," Weeks said. "There is too much oil going directly from the well to the refinery, and when it gets there the commission is powerless. As a result, these refineries have become a clearing house for 'hot oil'. Neither does the commission have enough men to handle the

Governor M. A. Ferguson

She Signed the Oil Control Bills

Texas Commissioner Seeks Defeat of Federal Tax Bill

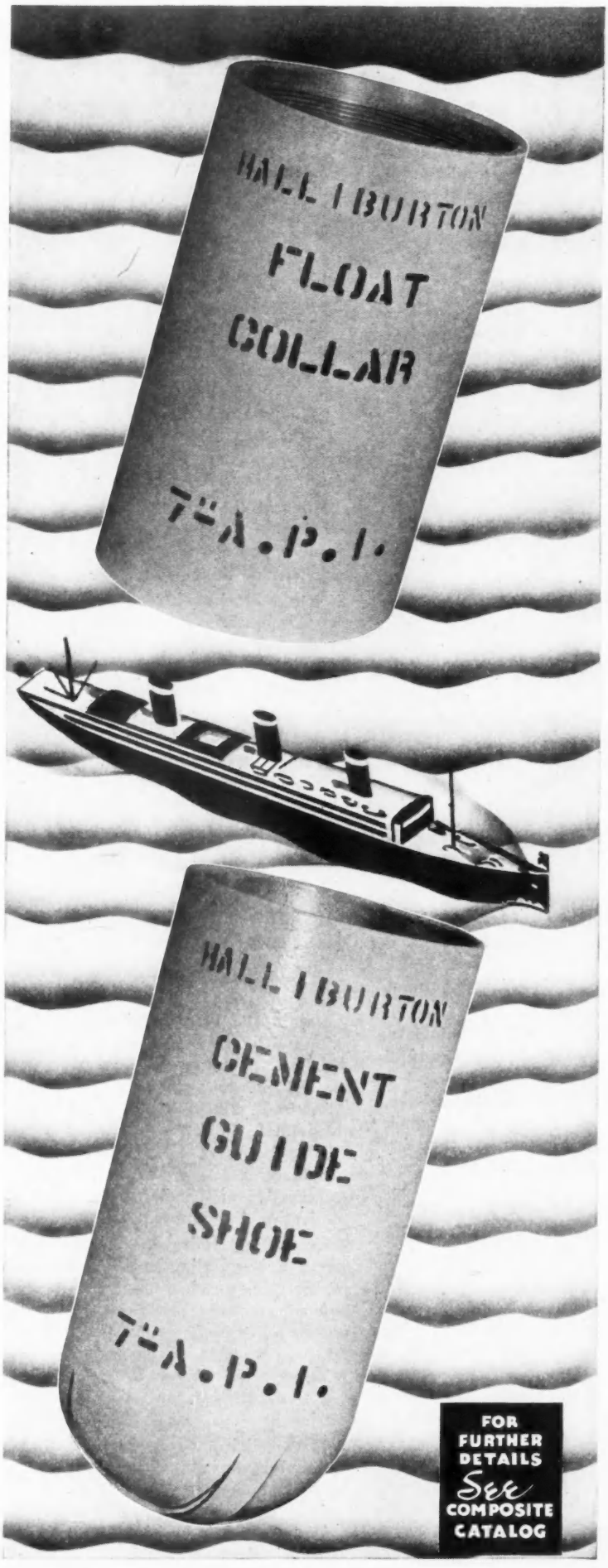
Austin, Texas. — Commissioner Ernest O. Thompson Friday sent the following telegram to Senator Tom Connally:

"The governor has just signed all three of the bills which I sent to you at your request. We got these bills passed and signed to protect the sovereignty of Texas and make entirely unnecessary any invasion of the state's rights by the Federal Government. May I again implore you to defeat the proposed petroleum tax at the well and at the refinery now before the senate. It is a very small tax and is plainly not intended as a revenue measure but is an attempt to do indirectly what the Federal Court has plainly said could not be done directly, that is, put inspectors in Texas under the guise of tax collectors.

The bills as signed by the Governor of Texas give us ample funds and every conceivable authority to enforce our orders so please leave to the State of Texas the proud privilege of administering her own internal affairs. Do not take from us this last vestige of sovereignty.

"You gave us at our own request the splendid hot oil amendment preventing interstate shipment of oil illegally produced. That is all that is needed from the Federal Government. History shows that once you turn one bit of authority over to the Federal Government it is never released but steadily increased. Witness our Railroad Commission powers in Texas over railroad rate matters. The Federal Government has about taken all of our rate powers, even intrastate.

"As governments grow powerful, as they broaden and expand in territory and influence so that administration ceases to be personal and becomes bureaucratic, those who administer it tend to become more and more impatient of limitations and restraint. Coming more and more to regard themselves not only as the executors, but as the sources of power, they first evade as is now contemplated by the proposed federal tax law, then they boldly defy the limitations which, successfully evaded, they learn to despise."



AMPLE . . . *floating* STRENGTH FOR LONGEST STRINGS

● Any oil-field engineer will agree that the essential requirements of efficient Float Collars and Guide Shoes are: (1) ample floating strength for even the longest string of casing; (2) maximum cementing clearance consistent with strength and drilling-out ease; (3) coordinated design with other cementing equipment to eliminate excess interference with cement flow; (4) drilling-out ease, and (5) minimum interference with coring at, or just below the guide.

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situation, nor am I entirely satisfied with the caliber of the men they have. It would take 200 good men to handle the 1500 wells that are overproducing now.

"If the district attorneys in East Texas do not get busy and prosecute some of the cases we bring before them under this bill, we are going to build a fire under them," Weeks said, "they have been asleep. We want the commission to have the money and the law, and if they don't enforce it, we'll get after them with a club."

Weeks declared that the state had lost $15,000,000 in taxes that should have been paid by violators.

He read a telegram from F. W. Fischer, Tyler attorney, and representative of the largest faction opposing the passage of the refinery bill. Fischer said that he favored the passage of this measure now, although he had fought against it during the legislative session. His message implied that he feared federal control would replace state control unless the bill became law, and that the burden on operators would be far greater if this result obtained.

Weeks then read a list of Fischer's clients, and intimated that they had also capitulated. This was denied later.

"The only labor element against this bill," Weeks declared, "is the riff-raff that hangs around the pool halls. The price of crude must be sustained to maintain the wages of labor. The only man who will lose a job through the passage of this bill is the one who flows these wells in the dead of night, although they could make their allowable during the noon hour."

"The refiners have no secrets that will be disclosed by these inspections," he said, "except their violations of the conservation laws.

"Of course the reclaimers will be run out of business, and they should be. They have been flowing oil into the creeks so that it could be recovered. The theft of oil is a disgrace to the State of Texas," he concluded.

Speaking for the practical oil operators, Captain J. F. Lucey, Dallas, declared that "East Texas controls the price of oil throughout the world. If we break the price now, at least two years will be required to recover. The oil industry now has the best prospects I have seen in 34 years of operation."

H. T. Adams, labor leader and president of unions of oil field and refinery workers including 6000 men, said that his group favored the bill and that they had sent him to Austin to advise the Governor of their stand.

E. L. Smith, speaking for operators in other sections of the state, said that the bill is universally favored by all independent operators save those who are violating or want to violate the conservation laws. He explained that refineries in East Texas that are using 75,000 barrels of oil daily are connected to wells with allowables totaling only 18,000 barrels. He expressed the opinion that much of the gasoline refined from this oil brought no tax to the state.

Sam R. Greer, East Texas banker, said that unless oil field conditions were stabilized the banks would be forced to withhold loans to oil operators. He said that the federal government had warned bankers against oil loans until the industry became stabilized.

Other speakers representing the landowners and attorneys expressed similar sentiment.

At the close of the meeting Governor Ferguson expressed her thanks for the information, and invited opponents of the bill to appear.

Representative Joe Greathouse of Fort Worth was the first speaker and declared the bill should be defeated because it carried no clause assuring the local refiner of sufficient oil before any was shipped from the field. He had supported an amendment to this effect during the legislative fight on the measure, and it was voted down, largely because the members felt it was unconstitutional. Greathouse cited the Supreme Court decision in the New York Milk case handed down during the past week, and said that this was proof of the constitutionality of the amendment he had proposed.

"The commission should be able to enforce the law without a 'search and seizure' power," he said. "This is another step toward monopoly of the gasoline market by the major companies. They have sought to crush competition in every oil producing state. I am convinced that they have always combined to fix the price of gasoline through their set-ups under the A. P. I. and the Federal Trade Commission, and they have gone unpunished, although they were violating the state and federal anti-trust laws. The standard prices are obvious evidence of this agreement."

Jules Constantine, president of the Independent Refiner's Association of East Texas, declared that nominations for the purchase of 600,000 barrels of crude daily from the East Texas field had been received by the Railroad Commission at the last hearing, yet the allowable remained near 400,000 barrels daily.

"If this bill passes the independent refineries of East Texas will have to close down," he said, "on account of their inability to get enough allowable oil or legitimate oil to maintain operations. You will notice that the bill says refineries 'may' be inspected, rather than 'shall' be inspected. This will lead to discrimination. I am sure that they will take advantage of the independent refiner."

J. G. Pundt of Dallas, independent refiner, said that Weeks had misstated the facts at the hearing earlier in the week. He said that the commission could gauge oil at the well, the source of production, and could find out exactly how much is produced.

"This is a fight against the independents that began 18 months ago with the price cut. Why don't they admit the true purpose of the bill?"

He said that the independent refineries employ 3000 men, and that pipe line companies connected to them employ an additional 3000 men.

"The majority of the people supporting this bill here have run more hot oil in East Texas than any independent dared to run," Pundt said.

He stated that during hearings before the legislature a representative of the railroad commission said that the commission had no desire to check the major companies, but wanted to check the small refiner in East Texas.

"They want to favor the major companies," Pundt charged.

Union Leader Recognized In Fort Worth Case

Washington, D. C.—Paving the way for a settlement of the labor controversy at the Fort Worth plant of the Magnolia Petroleum Company, Oil Administrator Ickes on March 5 concurred in an opinion by Solicitor Nathan R. Margold giving recognition to John L. Colter, secretary of the Oil Field, Gas Well and Refinery Workers' of America union, as the official representative of the plant's employes for collective bargaining.

Appealing a decision of the Petroleum Labor Policy Board of February 6, directing an election for the purpose of naming an authorized representative of the employes to bargain with the company, Magnolia Petroleum Company asked for a review of the case and an interpretation of the decision.

The solicitor's opinion held that the labor board's ruling did not necessitate a formal election, since 80 out of 115 of the company's employes had recognized Colter, in writing, as their duly authorized representative.

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Geologists Announce Program For Annual Session at Dallas

Tulsa.—The nineteenth annual meeting of the American Association of Petroleum Geologists will be held at Dallas, Texas, March 22, 23, and 24. It is expected that last year's attendance of 1000 at Houston will be exceeded by several hundred.

The Dallas Petroleum Geologists, whose officers are: Francis E. Heath, Sun Oil Company, chairman; John C. Karcher, Geophysical Service, Incorporated, vice chairman; and Charles B. Carpenter, U. S. Bureau of Mines, secretary-treasurer, are hosts this year. The Dallas convention committee is composed of Clyde M. Bennett, Magnolia Petroleum Company, chairman; Chester A. Hammill, consulting geologist, vice chairman; and the following sub-committee chairmen: Program, Frederic H. Lahee, Sun Oil Company; registration, Francis E. Heath, Sun Oil Company; entertainment, Joseph M. Wilson, Simms Oil Company; equipment, George E. Dorsey, Magnolia Oil Company; finance, R. B. Whitehead, Atlantic Oil Producing Company; publicity, S. M. Aronson, Atlantic Oil Producing Company; trips, David J. Crawford; golf, Edwin B. Hopkins; reception, L. W. Orynski.

The outgoing officers of The American Association of Petroleum Geologists are: president, Frank R. Clark, Mid-Kansas Oil & Gas Company, Tulsa, Oklahoma; past president, Frederic H. Lahee, Sun Oil Company, Dallas, Texas; vice president, George Sawtelle, Kirby Petroleum Company, Houston, Texas; secretary-treasurer, William B. Heroy, Consolidated Oil Company, New York; editor, Luther C. Snider, Henry L. Doherty & Company, New York.

Two technical divisions of the association, paleontology and geophysics, hold concurrent meetings. The officers of the Society of Economic Paleontologists and Mineralogists are: president, F. B. Plummer, University of Texas, Austin, Texas; vice president, Hubert G. Schenck, Stanford University, California; secretary-treasurer, Gayle Scott, Texas Christian University, Fort Worth, Texas; editor, Raymond C. Moore, University of Kansas, Lawrence, Kansas.

The officers of the Society of Petroleum Geophysicists are: president, Eugene McDermott, Geophysical Service, Incorporated, Dallas, Texas; vice president, J. P. Schumacher, Torsion Balance Exploration Company, Houston; secretary-treasurer, John F. Weinzierl, consulting geologist, Houston; editor, Ludwig W. Blau, Humble Oil & Refining Company, Houston.

The general program follows:

Tuesday, March 20

7:00 p.m. — Executive committee, Frank R. Clark, chairman.

Wednesday, March 21

9:00 a.m.—Geologic Names and Correlations committee, M. G. Cheney, chairman.

9:00 a.m.—Applications of Geology committee, F. H. Lahee, chairman.

11:00 a.m.—Research committee business, D. C. Barton, chairman.

2:00 p.m.—General Business Committee, R. S. Knappen, chairman.

6:15 p.m.—Research Committee, informal dinner and discussion, "Migration of Petroleum."

Thursday, March 22

10:00 a.m.—Address of Welcome, J. Ben Critz, Dallas Chamber of Commerce. Response and address of the president, Frank R. Clark.

1. Robert T. Hill—"The Texas Cretaceous Continued."

2. S. A. Thompson—"The Fredericksburg Division of the Lower Cretaceous with Special Reference to North-Central Texas."

3. E. DeGolyer—"Notes on the Development of the Technique of Oil Finding."

2:00 p.m.

4. Frank W. Michaux, Jr.—"A Comparison of the Structural and Reservoir Conditions of the Conroe and Tomball Oil Fields."

5. L. L. Nettleton—"Fluid Mechanics of Salt Domes."

6. Hugh D. Miser—"The Carboniferous Rocks of the Ouachita Mountains."

4:45 p.m.—Nomination of officers.

Friday, March 23

9:a.m.:

7. M. G. Cheney—"Well-Spacing Problems Involved in Petroleum Geology."

8. C. Dwight Avery and J. Charles Miller—"The Relationship of Geology to Unit Operation of Oil and Gas Fields Involving Government Lands."

9. O. E. Meinzer—"Movements of Underground Water."

10. Orval L. Brace—"Factors Governing the Estimation of Recoverable Oil Reserves in Sand Fields."

2: p.m.:

11. J. S. Hudnall—"The East Texas Field."

12. Ed. W. Owen and David J. Crawford—"Fault Systems of the Gulf Coastal Plain."

13. Ira H. Cram—"A Study of Subsurface Faults in Oklahoma."

Saturday, March 24

9:00 a.m.—Annual Business Meeting.

10:00 a.m.:

14. Theodore A. Link—"The Petroleum Industry at the Century of Progress, Chicago, 1933."

15. N. W. Bass—"Origin of the 'Bartlesville' Shoestring Sands of Kansas."

16. Parker D. Trask and H. E. Hammar—"Preliminary Study of Source Beds in the Mesozoic Rocks on the West Side of the Sacramento Valley, California."

2:00 p.m.:

17. Shepard W. Lowman—"Cherokee Structural History of Oklahoma."

18. Thomas N. Ragsdale — "The Chandler Pool and West Extension of Lincoln County, Oklahoma."

Papers by Title

1. David White—"Age of Jackfork and Stanley Formations in the Ouachita Mountains."

2. C. B. Read and T. A. Hendricks—"Correlation of the Pennsylvanian Strata in the Arkansas and Oklahoma Coal Fields."

3. D. C. Nufer—"Stratigraphy in the Ardmore Area."

4. J. Lawrence Muir—"Anhydrite-Gypsum Problem of Blaine Formation."

5. B. H. Parker—"The Cretaceous Geosyncline of the Rocky Mountain Region."

6. C. E. Erdmann—"Geology of Whitlash Dome, Liberty County, Montana."

7. J. S. Irwin—"Geology and Oil Resources of Cut Bank Field, Montana."

8. S. Pirson—"Oil and Gas Possibilities of Belgium and the Belgian Congo."

9. O. C. Wheeler—"The Infantis and La Cira Oil Fields of Colombia."

10. J. Harlin Johnson—"Pennsylvanian and Permian of Colorado."

11. W. C. Blackburn—"The Hilbig Oil Field, Bastrop County, Texas."

12. T. A. Link—"Structure of the Turner Valley Gas and Oil Field, Alberta."

The Geophysics program includes the following papers.

Friday, March 23

(Dallas Power and Light Building)

1. E. E. Rosaire—"Gulf Coast Exploration Trends."

2. Sylvain Pirson—"The Effect of Anisotrophy on the Apparent Resistivity Curves."

3. W. P. Jenny—"Geological Corre-

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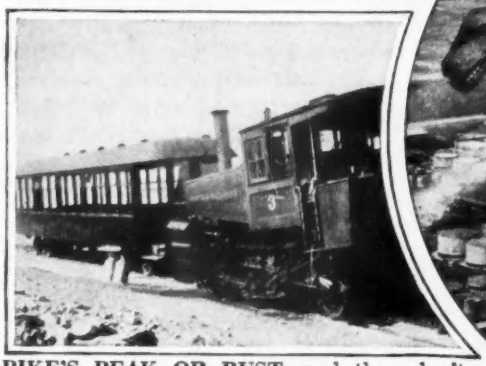
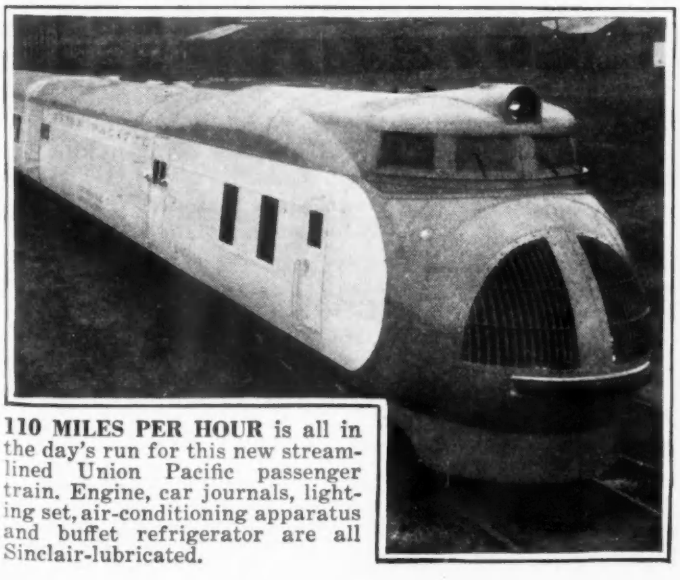
SINCLAIR TANK CARS LOADING at one of the 8 great Sinclair refineries. Sinclair sells 1½ billion gallons of products annually—a fact which indicates the value of the Sinclair franchise for distributors, jobbers or dealers. For details write the nearest Sinclair office—or the Sinclair Refining Company (Inc.), 45 Nassau Street, New York City.



PIKE'S PEAK OR BUST—and they don't bust. Mountain-climbing locomotives on the Manitou & Pike's Peak Railway have been Sinclair-lubricated for eleven years.

THE SINCLAIR DINOSAURS symbolize the vast age of the crude oils refined into Sinclair lubricants. Sinclair offers you a wider line of high quality lubricants because it uses the oldest crudes from America's 3 great producing areas.



110 MILES PER HOUR is all in the day's run for this new streamlined Union Pacific passenger train. Engine, car journals, lighting set, air-conditioning apparatus and buffet refrigerator are all Sinclair-lubricated.

SINCLAIR TAMPER-PROOF CANS boost sales. Since Sinclair started marketing canned motor oils over a year ago, Sinclair distributors, jobbers and dealers report big sales increases. Write for details.

lations of Gravimetric and Magnetic Anomalies on the Gulf Coast."

4. W. T. Born and J. E. Owen—"Velocity of Elastic Waves in Amherst Sandstone."

5. J. C. Karcher and Eugene McDermott—"Practical Limitations of Resistivity Methods."

The Paleontology program follows:

Friday, March 23

(South Room, Peacock Terrace)

1. C. I. Alexander—"Ostracoda of the Midway of Texas."

2. R. W. Harris—"Wilcox and Claiborne Ostracodes from Gulf Coast of United States."

3. Merle C. Israelsky—"Tentative Foraminiferal Zonation of the Claiborne."

4. H. B. Stenzel—"Sparta-Crockett Transition on Brazos River, Texas."

5. Henry V. Howe and Julius B. Garrett, Jr.—"Sabine Eocene Ostracodes."

6. H. B. Stenzel—"Use of Small Macrofossils in Correlation."

7. M. A. Hanna and D. W. Gravell—"Larger Foraminifera from the Moody's Branch Marl, Jackson Eocene of Texas, Louisiana, and Mississippi."

8. M. A. Hanna and D. W. Gravell—"Studies on the Oligocene of the Texas Region."

9. Henry V. Howe—"*Bitubulogeneria*, a New Eocene Genus of Foraminifera."

10. Henry V. Howe—"*Bairdia Subdeltoidea* (Munster) in American Tertiary."

11. Paul P. Goudkoff—"Foraminifera of Upper Miocene of San Joaquin Valley, California."

12. A. J. Tieje—"Present Ideas of Miocene Stratigraphy and Faunal Successions in California."

Miscellaneous Papers on Paleontology

1. R. W. Harris and Dan Jones—"Some New Species of Ostracodes and Conodonts from Francis Formation of Oklahoma."

2. Charles E. Decker—"Graptolites of Sylvan Shale of Oklahoma."

3. R. C. Moore—"Mississippian-Pennsylvanian Boundary in Mid-Continent Region."

4. E. M. Rice—"Notes on Gober Chalk."

5. J. Harlan Johnson—"Coprolite Horizon in Pennsylvanian of Chaffee and Park Counties, Colorado."

6. J. Harlan Johnson—"Algas of Genus Ottonosia from Pennsylvanian ot Central Colorado."

7. Gayle Scott—"A Cretaceous Ammonite with an Anomalous Suture Pattern."

8. Margaret Fuller Boos—"Heavy Minerals of Some Front Range Granites."

Oklahoma City Has 32 Active Tests

Oklahoma City.—Oklahoma City has 32 tests that may be classified as active and 30 old wells are being reconditioned in the Wilcox sand area. Among the active tests were seven wells drilling, five rigs taking shut down time, two tests rigging up rotary, five waiting on cement to set, two fishing, and two temporarily shut down.

Anderson-Kerr's Katy 1, NW NE NW NW Section 3-11n-3w, is shut down; Denver Producing & Refining Company's Washington 1, SW NE NW NW Section 3-11n-3w, is drilling below 6375 feet; Helmrich & Payne's Katy 1, NE NE NW NW Section 3-11n-3w, is waiting on cement to set on the oil string and preparing to standardize; Trans - Mississippi Oil Company's Miller 1, CNL NW SE Section 15-11n-3w, drilling below 4172 feet; Beverly Hills Oil & Gas Company's Classen 1, NE SE SE SW Section 22-11n-3w, waiting on cement to set on surface pipe; Nebo Oil Company's Community 1, NW NW NW NE Section 27-11n-3w, is drilling below 6604 feet; same operator's Little 3, SE NW NW, Section 27-11n-3w, digging pits; Harrel-Davis Oil Company's Riverside 1, SE SE SE SW, Section 34-12n-3w, is fishing for swab lost while trying to complete; the same operator's Riverside 2, SE SW SE SW Section 34-12n-3w, is a rig shut down; Helmrich & Payne's Larkin 1, NE NW SE Section 34-12n-3w, is shut down under order of the court; Westgate Oil Company's Carey 5, SW

Caddo Deep Test Is Fighting Possible Blowout

Tulsa.—Denver Producing & Refining Company's Adah-Noe 1, NW SW SW Section 34-10n-10w, continued to rate first place among a number of interesting Oklahoma wildcat tests as operators fought to prevent the well from blowing out. Drill pipe had been lowered to within 30 feet of bottom and heavy mud was being pumped in continuously. Pressure was released briefly on Thursday, March 8, and rotary mud was blown up into the derrick. Operators will set 6⅝-inch casing just above 9900 feet. Casing was to arrive about noon on Friday and running operations were scheduled to start shortly thereafter. There was much speculation as to the difficulty that would be encountered in obtaining circulation to enable cementing of the long string of pipe. This string, if successfully set, will be the longest string of 6⅝-inch pipe ever set in a well and will weigh approximately 260,000 pounds assuming that it is set at 9900 feet.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Fouts 1, NW NW NE Section 14-17n-1w, discovery well on the Langston structure, nine miles northeast of Guthrie, was deepened from 5103 to 5112 feet and flowed 530 barrels during the succeeding 24 hours. On the following day it yielded 87½ barrels in four hours on the swab, apparently there was no increase in oil or gas due to deepening. Penetration in the Wilcox sand is now 15 feet.

In the Lucien pool, Shell Petroleum Corporation et al on the community block were in the Simpson section with three tests. Boley B-1, C SE NE Section 18-20n-2w, was bailing below 4250 feet with total depth at 5023 feet; J. W. Magney 3, C NE SW Section 17-20n-2w, cored shale and limestone from 5009 to 5017 feet and reamed the hole down from 4994 to 5009 feet; Wolff 2, C NW NW Section 17-20n-2w, on the discovery lease, was plugged back to 5199 feet and shut down awaiting orders; and Webber 3, C SW NW Section 18-20n-2w, was drilling below 2430 feet in shale and shells.

New Kansas Hunton Lime Pool Is Opened

Tulsa. — The outstanding development of the week in Kansas was the finding of a new Hunton limestone pool when Sinclair Prairie Oil Company deepened its Bass 1, C SW SE Section 26-23s-4w, in the Burrton area of northeastern Reno County. This well was originally completed for 23 million cubic feet of gas and a spray of oil from the chat horizon at 3230 to 3320 feet. Hunton limestone was found at 3585 feet and with one foot of penetration had 3200 feet of oil in the hole in 10 hours. Tanks were being erected and preparations made for a swabbing test. This is the first Hunton limestone production in the Burrton area, which is predominantly a gas field.

SW NE SE Section 34-12n-3w, is drilling by fish and still 100 feet off bottom; Wofford Drilling Company's Military Addition 2, SE SE NE SW Section 34-12n-3w, is fishing for cable tool bit; and same operator's Military Addition 4, NE SE SW Section 34-12n-3w, set 6⅝-inch casing at 6356 feet and is waiting on cement to set.

Burbank Extension Wells Must Be Tubed

Pawhuska.—The Osage Agency announced March 9 that all wells in the new Burbank extension area would be required to produce through tubing to conserve gas energy and to bring equity between gas and oil lessees. Gas rights in township 25n-6e are owned by the Kay County Gas Company. Oil lessees in this township own no rights to gas production.

Indian Land Lease Sale to Be Held

Muskogee, Okla.—The Five Civilized Tribes will offer on March 20 at 10:00 A. M., at the lease agency here, oil and gas mining leases on 93 tracts of restricted Indian land, a total of 7,056.24 acres in seven counties. This is the third sale under new lease forms promulgated on October 10, 1933 by the Department of Interior. The form has met with wide disapproval and many operating companies are showing this disapproval by not attending sales. Tracts by counties are as follows: Coal County, 40 tracts, comprising 3,365.69 acres; 40 tracts in Pontotoc County, 2,807.95 acres; Wagoner County, two tracts, 320.00 acres; four in Tulsa County, 278.55 acres; four in Okfuskee County, 161.55 acres; one tract in Creek County, 80.00 acres; and one tract in Hughes County, 2.50 acres.

Government Seeks Remainder of Julian Bond

Oklahoma City.—Execution, levying against cash and properties of Frank Russell, independent oil man of Oklahoma City, was issued by acting United States Attorney W. C. Lewis on Monday, March 5, to force collection of a portion of the forfeited $25,000 bond of C. C. Julian. Russell is one of the three signers on the bond along with Mrs. O. A. Cargill and John H. Peacock, who have paid in $6,557. The execution against Russell is for balance of $18,443 although his prorated share is $8,333.33.

Oklahoma Commission to Operate Excess Wells

Oklahoma City.—The Oklahoma State Corporation Commission took a far-reaching step during the past week when it announced that wells from which production could not be limited to allowables would be shut in and produced only under supervision of the proration department. Considerable difficulty has been experienced with certain operators regarding overproduction. The new move is designed to give the commission power to limit production to allowable.

A hearing has been set before the corporation commission on March 23 which will deal with reclassification of the new Crescent pool in Logan County. Under present rules the pool is Class D or wildcat pools, and is allowed to produce 50 barrels per well per day. Gypsy Oil Company seeks to have the pool changed to Class A, which would permit nominations and a larger allowable.

The commission has relented from its stand that all Wilcox sand wells that do not take a four-hour open flow test for new potential rating would be required to take a decline of 65 percent below last potentials. The zone has been divided into two parts, the northern portion to take 65 percent decline and the southern 30 percent in lieu of actual gauging. Operators are given the option of gauging or taking the percentage decline.

Nemaha Ridge Discovery Well to Be Deepened

Tulsa.—Interest in the Nemaha Ridge and parallel trends through central Oklahoma continues to run high as Amerada Petroleum Corporation and Stanolind Oil & Gas Company prepared to deepen Fouts 1, NWc NE Section 14-17n-1w, approximately nine miles northeast of Guthrie in Logan County. Tools were recovered from the hole during the week and the well continued to flow by heads putting 330 barrels in the tanks the last full 24-hour gauge. Operators have installed four additional 500-barrel tanks, making 4000 barrels storage capacity at the well, with about 2200 barrels yet to be filled. Stanolind Pipe Line Company is laying 10 miles of six-inch line from its Orlando-Cushing line and should have the well connected in another week. The well is making 47 gravity oil with a relatively small amount of gas but as it is drilled deeper operators expect to encounter more gas. Penetration at the present total depth is only five feet.

In Osage County, Peters Petroleum Company and Norbla Oil Company's 1, SWc Section 15-25n-5e, was rigging up.

In Kay County, E. D. Buck's Bush 1A, CNE NE Section 25-28n-4e, was drilling below 150 feet.

Acre et al's Acre 1, (owdd), CSE NE Section 14-24n-11w, 13 miles south of Cherokee in southern Alfalfa County, was shut down at 6460 feet.

Indian Territory Illuminating Oil Companys' Clark 1, CNW NW Section, in southern Garfield County, rig was blown down.

Stanolind Oil & Gas Company's Van 1, in Noble County, SW SW NE Section 29-21n-1w, was shut down at 5069 feet.

Continental Oil Company's Beumer 1, CSW NE Section 8-19n-20w, in extreme northwest corner of Dewey County, was circulating at 4025 feet.

In Payne County, Mid-Continent Petroleum Corporation's Swank 1, SE NE NE Section 19-19n-2e, was shut down for orders at 4733 feet.

Anderson-Kerr's Hull 1A, CSL NE NE SE Section 11-18n-4w, in Logan County, set nine-inch casing and was rigging up standard tools in Layton sand at 4775 to 4778 feet.

L. G. Hulse's Sloan 1, SW NW SE Section 19-17n-3e, 4½ miles northwest of the nearest production in northwestern Lincoln County, was shut down at 1209 feet. Anderson-Kerr's Huckabee 1, SWc Section 9-15n-2e, was a rig. Indian Territory Illuminating Oil Company's Z. Stanley 1, CSE NE NW Section 33-14n-4e, had Oswego lime at 4155 feet and was drilling at 4247 feet. Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Martinke 1, NW NW SE Section 35-13n-5e, was shut down at 4425 feet. Muckleberry et al's Boland 1, SWc Section 25-12n-3e, swabbed 293 barrels of oil in 13½ hours and was shut down for orders.

Jadeka Development Company's Frakes 1, CSW NE SW Section 16-15n-6w, Kingfisher County, was shut down at 2531 feet.

In Creek County, F. P. Henry's

Jacobs 1, NW SW SW Section 1-15n-7e, was a cellar. McBride et al's Wickham 1A, NE NW SE Section 3-15n-7e, was moving in tools.

Springrose Drilling Company's Edwards 1, CSE SE Section 19-11n-1e, in Oklahoma County, set 120 feet of five-inch perforated liner on bottom; treated with 1500 gallons of acid; loaded hole with oil and was waiting.

Amerada Petroleum Corporation's Parsons 1, 335 north of south line of Lot 7, Section 12-11n-6e, in Pottawatomie County, ripped casing from 4215 to 4219 feet and was dry; ripped casing from 4190 to 3195 feet and was dry and abandoned. Atlantic Oil Producing Company et al's School Land Community 1, CNE NW NW Section 26-10n-4e, was plugged back to 4240 feet then plugged back to 4220 feet; could not drill through pipe; plugged back to 3740 feet and ripped casing from 3735 to 3740 feet and was dry and abandoned with a hole full of water. Deep Rock Oil Corporation and Margay Oil Corporation's Adams 2, NW NE Section 11-6n-3e, was dry in sand from 3730 to 3734 feet; has small showing of oil in sand at 3745 to 3750 feet; set six-inch casing at 3740 feet and was rigging up standard tools.

Carter Oil Company's Community Randolph 1, CS½ SE NE Section 35-11n-6e, Seminole County, swabbed 610 barrels of oil and 60 barrels of water in 24 hours at 4099 feet. Carter Oil Company et al's Larney Community, CN½ NW NW Section 1-10n-6e, was preparing to drill out cement at 2700 feet. Carter Oil Company et al's Jarvis Community, CE½ NE SW Section 18-10n-6e, set 12-inch casing at 156 feet and was drilling at 1848 feet. Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Aldridge 1, CN½ S½ SE Section 2-5n-7e, swabbed 20 barrels of oil and 40 barrels of water in 12 hours from Gilcrease sand and was shut down for orders.

In Caddo County, Denver Producing & Refining Company's Noe 1, NW SW SW Section 34-10n-10w, had 13 feet of rich sand at 9900 to 9975 feet and was installing connections.

West Oak Gas Company et al's Powell 1, NW NW SW Section 11-9n-25w, in Beckham County, was drilling below 3182 feet. Phillips Petroleum Company and Ramsey Oil Company's Martin 1, CNW NE Section 27-9n-23w, was preparing to plug back from 4110 feet to test sand.

In Hughes County, Olympic Oil Company's McClassen 1, SE NW NW Section 12-9n-8e, lost tools and was shut down at 600 feet. J. B. Hill et al's Perkins 1A, CW½ SW SW Section 7-5n-9e, was drilling below 850 feet.

Anderson-Kerr et al's Rodke 1, NW NE NW Section 21-4n-1w, in northern Garvin County, had Viola lime at 4797 feet; Dolomite at 4820 feet and cored Dolomite and Green shale at 4829 to 4845 feet. Phillips Petroleum Company's Dennis 1, CSE SE NE Section 9-4n-1e, was drilling in lime at 3873 feet. Kilgore et al's Williams 1, SE NW SW Section 20-1n-2w, was shut down at 2390 feet.

Arkhoma's Cummings 1, NW NE SE Section 6-4n-12e, in Pittsburg County, was drilling below 200 feet. Stencil Oil Company et al's Chunn 1, SE NW Section 29-4n-14e, was still a rig. W. E. Hailey's Drew 1, NW NW SW Section 21-3n-14e, was rigging up machine.

In Pontotoc County, Galbreath's Stafford 1, NE SE SE Section 31-2n-6e, was shut down at 1380 feet.

Westheimer & Daube's Lowman 1, CNE SE Section 18-2n-8e, in Coal County, was spudded to 20 feet.

George Pace et al's Siever 1, SE SE SW Section 4-1n-7w, in Stephens County, was a rig.

T. E. Revells et al's Wolfe 1, NEc Section 18-1n-2e, Murray County, was shut down at 2102 feet.

J. V. Scrivner et al's R. J. Swink 1, CNE SE Section 29-6s-20e, in Choctaw County, was shut down at 410 feet.

Angle-Luncy's Ringling 1A, NE SW SW Section 11-5s-1w, was drilling in below 2240 feet in lime, in McClain County.

In Nemaha County, Malernee et al's Greenville National Bank, NW SW Section 36-2s-13e, was drilling below 440 feet.

Oklahoma Completions Include 13 Dry Holes

Tulsa.—Eighteen new oil wells with total initial production of 10,531 barrels, and 13 dry holes were included in the Oklahoma completion list during the week. Of the total of 31 completions, two were old wells plugged back and three were old wells drilled deeper for a total footage of 80,858 feet, including 865 feet drilled in the three old wells. The reports are tabulated below:

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter County—		
Magnolia Petroleum, Williams, sw ne nw 19-1s-2w	191	1327
L. J. Woodruff, Brady 1, nw sw sw 32-1s-2w	15	2317
W. H. Smith, Carter 1, ne nw sw 13-1s-3w	*	3063
Mudge Oil, Walker 1, se ne sw 25-1s-3w	*	3010
Creek Sounty—		
Turner et al, Gross 1, cnl sw se 36-17n-11e	*	2690
Gibson & Glenn, Jackson 3, sw sw ne nw 3-18n-8e	25	2664
J. E. Crosbie, Escoe 8, cnl ne sw 26-18n-8e	*	2570
Gled Oil, Escoe 6, csl sw se 27-18n-8e	60	1315
A. E. Humphrey, Lukes 1, se se se sw 27-18n-8e	5	1312
Hughes County—		
Buchner et al, Scott 1-A, sw ne ne 4-7n-8e	*	3350
J. G. Buell, Canard 2, se nw nw 28-9n-10e (owpb)	13	3774
Lincoln County—		
Slick-Urschel, Mayer 1, nwc nw 17-14n-4e	2914	5031
Logan County—		
Gypsy and Carter, Knowles 1, cnw nw 34-7n-4w	¶11½-5389	6296
Shell et al, Wolff 1, cse nw 17-20n-2w (owpb)	200	5199
Stanolind Oil & Gas, Vann 1, sw sw ne	*	5069
Muskogee County—		
Metzer et al, Parks 1, sw sw nw nw 12-14n-17e	*	1298
D. Lampton, L. Fields 1, nec sw 9-15n-18e (owdd)	*	1663
Okfuskee County—		
W. E. Flemming, Pincham 4, sw se se 2-10n-11e	40	1680
Amerada Petroleum, Parsons 1, se nw se 12-11n-6e	*	4681
Okmulgee County—		
Colton-Phillips, Ragsdale 2, nw sw se 30-14n-12e	27	2844
Osage County—		
Champlin Refining, Kennedy 1, ne ne se 16-24n-7e (owdd)	78	2665
Skelly Oil, 1, ne ne nw 28-24n-7e	25	2782
Payne County—		
Mid-Continent, Swank 1, se ne ne 19-19n-2e	*	4733
Pontotoc County—		
Denver Producing & Refining, Burk "B" 1, ne sw se 25-5n-4e	168	2592
Pottawatomie County—		
Gypsy et al, Tenwas 3, cel ne sw nw 25-6n-4e	900	3437
Tippet and Brown, Hathcock 1-A, swc se 14-7n-4e	156	4016
Sinclair Prairie, Myers 4, ne sw se 32-7n-4e	310	4268
Seminole County—		
Manahan et al, Reed 1, ne nw ne 35-6n-7e	*	4320
J. Burns, Shephard 1-A, sec ne (owdd)	*	1658
Tulsa County—		
W. C. Hatch, Carr 1, sw sw nw ne 23-18n-14e	*	1470
Wagoner County—		
Sheridan, Snake 6, ne ne sw nw 26-18n-15e	15	1058

*Failures; †Junked; ¶Million cu. ft. gas.

Osage County Leads Oklahoma in New Work

Tulsa.—Oklahoma experienced another big week when scouts reported 52 starts in 14 scattered counties. Eastern counties contributed 21 first reports, Osage County leading with 15 new tests principally in the new Burbank Extension and Naval Reserve area. The Seminole district, represented by Hughes, Pontotoc, Pottawatomie, and Seminole Counties, had 19 first reports, central Oklohoma, nine first reports, and southern Oklahoma, three first reports, a total of 52 reports the details of which are shown below:

In Carter County, Carter Oil Company's Pierce 4, NE SE SW Section 8-2s-2w, is a location.

Atlantic Oil Producing Company's J. Bear 4, NE NW NW Section 16-14n-10e, in Creek County, is an old well rigging up to drill deeper from old depth of 3250 feet.

Cummings et al's Gage Estate 1, SEc NW Section 27-22n-3w, in Garfield County, is a location. This test was formerly reported as Cunningham et al's SWc NE.

Manahan's Chapman 5, NW SW SE Section 10-7n-8e, in Hughes County, is a location. Elliott's Pickens 3, NE SW NE Section 15-7n-8e, is rigging up. Harmon's Vierson 1, NE NE SE NW Section 15-7n-8e, has machine on location. Limestone Oil & Gas Company's Walker 10, NW NW SE NE Section 15-7n-8e, is rigging up. Baker & Morris' Jacobs 1, NE SW SW Section 22-7n-8e, has machine on ground. Magnolia Petroleum Company's Witty 3, NE NE NW SW Section 22-7n-8e, is rigging up. Roodhouse's Amery 1, NWc SW Section 28-7n-8e, is a location.

Three in Noble

Noble County had three new wells: Magnolia Petroleum Company's Long 2, CNW SE Section 20-20n-2w, digging cellar; Shell Petroleum Corporation's Kolb 1, CNW SW Section 28-20n-2w, rig on ground; Carter Oil Company's Tate 1, CNE NW Section 29-20n-2w, location.

In Okfuskee County, Mid-Continent Oil Corporation's Fields 1A, SEc NE Section 3-11n-11e, an old well, is cleaning out to drill deeper from 3732 feet.

Anderson & Kerr et al's Wallace 1, NEc NW Section 22-11n-3w, is rigging up rotary, in Oklahoma County. Carl Larkin's Goodwin 1, SEc NW Section 22-11n-3w, has rig on ground. Indian Territory Illuminating Oil Company's Peterson 9, SWc SW Section 25-11n-3w, is building rig. Indian Territory Illuminating Oil Company's Wisel 5, SEc SE Section 26-11n-3w, is digging cellar. Indian Territory Illuminating Oil Company's Goldie Lord 3, NEc NE Section 35-11n-3w, is digging cellar. Indian Territory Illumniating Oil Company's Oklahoma State 11, NWc NW Section 36-11n-3w, is digging cellar.

In Okmulgee County, J. R. Allen's Smith 1A, SW NE SE Section 34-14n-12e, is drilling below 125 feet. A. B. Chain's Gray 1A, SE SE NE NW Section 12-15n-12e, is rigging up.

Fifteen in Osage

Osage County reported 15 new wells. Osage Syndicate's 16, CEL W½ NW Section 7-21n-9e, has been located. Producers & Refiners Corporation's Baird 5, NE SW SW Section 15-24n-7e, is building rig. Producers & Refiners Corporation's Baird 6, SWc SW Section 15-24n-7e, and Champlin Refining Company's Kennedy 11, NE SE SE Section 16-24n-7e, are cellars. Champlin Refining Company's Kennedy 12, SEc SE Section 16-24n-7e, is located. Continental Oil Company and Gypsy Oil Company's Farrell 3, NEc NE Section 1-24n-7e, is a location. Continental Oil Company and Gypsy Oil Company's Mason 2, NWc NW Section 32-24n-7e, is a location. Empire Oil & Refining Company's Colby 1, NE SE NE Section 3-25n-3e, is digging cellar, as is Carter Oil Company et al's 1, SWc NE Section 3-25n-6e. Carter Oil Company's 1, NWc SE Section 3-25n-6e, is a location. Skelly Oil Company's 1, NEc SW Section 3-25n-6e, is a location. Carter Oil Company et al's 3, CWL W½ SE Section 10-25n-6e, is a location. Mead Oil Company's 4, CEL E½ SW Section 10-25n-6e, is located. Mead Oil Company's 5, NE NW SW Section 10-25n-6e, is located. Sinclair Prairie Oil Company's 3, NWc NW Section 22-25n-6e, has rig on ground.

In Pontotoc County, Fleetborn's Wagner 1, NE SE SE Section 18-2n-7e, has rig on ground. Mabee, Incorporated, et al's Lance 1, SWc NE Section 18-2n-7e, is located. Manahan et al's Norris 1, SE NW SE Section 18-2n-7e, is a location. Magnolia Petroleum Company's 1, SWc SW Section 19-2n-7e, is located. Moore & Deaner's Edwards 1, NW NE SE Section 27-2n-8e, has rig on ground. Emanuel et al's Mayer 1, SW SE NW Section 7-3n-8e, is a machine. Mason et al's Layen 1, SW NW NW Section 30-5n-5e, is a cellar.

W. Clark's Jordan 1A, SW SE SE Section 10-7n-4e, in Pottawatomie County, is building rig. Vaughn et al's Bettis 1A, NE SW SE Section 17-7n-4e, is a cellar.

Sinclair Prairie Oil Company's Foster 5, NWc NW Section 33-8n-8e, in Seminole County, old well drilling deeper from depth of 3148 feet, is drilling below 3220 feet. Carter Oil Company's Kider 2, CEL NW SW Section 2-9n-6e, has rig on ground. Crofton & Wallace's Haulsaee 1-A, SWc SW Section 8-9n-7e, is located.

In Stephens County, O. P. Darsey's White 1, SEc SE Section 9-2s-5w, is a location. Jones Brothers' Toney 2, NW NE SW Section 27-2s-7w, is drilling below 890 feet and was formerly reported in the NE NW SW. George Pace's Payne 3, SW SE NE NW Section 28-2s-7w, is rigging up rotary.

In Tulsa County, Keener Oil & Gas Company's Drew 1, SEc NE Section 34-18n-14e, is drilling below 200 feet.

Cahill's Tiger 4, NE NE SE NW Section 2-17n-15e, in Wagner County, shut down after spudding.

Only One New Wildcat Start for Kansas

Wichita, Kansas.—Goering Brothers and Bradley added the only new wildcat test in Kansas when location was made for Decker 1, NE NE SE Section 20-18s-1w, approximately seven miles northeast of the old McPherson gas field in northeastern McPherson County. The test is to be between McPherson Oil & Gas Company's Stern 1, SW NE SW Section 17-18s-1w, a dry hole completed at 3515 feet in February, 1929 and Simmons and Mid-Kansas Oil & Gas Company's Krehbiel 1, SEc NW Section 33-18s-1w, a dry hole at 3497 feet completed in August, 1932. Although this area has not received a wide play due probably to the greater interest farther to the south, it lies in the Abilene Arch trend where all tests should be watched, especially when there is subsurface information upon which to check geophysical work.

Wentz and Continental Oil Company et al's Kerns 1, SE SE NE Section 6-24s-2w, in Sumner County, was drilling below 2960 feet.

In Elk County, Lerke et al's Mason 1, CNE NE Section 5-31s-10e, was shut down at 700 feet.

D. R. Lauck and Shoreline's Jordan 1, in Sedgwick County, NW SW SE Section 6-28s-1w, had hole full of water from 2004 to 2014 feet; set 10-inch casing at 2025 feet; show of water at 2115 feet and was drilling below 2295 feet.

In Reno County, Stanolind Oil & Gas Company and Amerada Petroleum Cor-

poration's Hilger 1, SE SE NW Section 16-26s-4w, was drilling below 3581 feet. Roth & Faurot's Yoder 1, CNW NW Section 15-24s-5w, had Siliceous lime at 3960 feet and was drilling below 3984 feet. Lario Oil & Gas Company and Elwell's Russell 1, NE NE SW Section 29-23s-7w, set eight-inch casing at 3347 feet and was drilling at 3430 feet.

Vickers Petroleum Company and Phillips Petroleum Company's Cravens 1, SW NE Section 15-25s-11w, had show of oil with a hole full of water at 3155 to 3165 feet and was underreaming eight-inch casing at 3225 feet, in Stafford County.

In Harvey County, Hartman et al's Jones 1, CNW SW Section 19-25s-1w, was treated with 1000 gallons of acid at 2912 feet.

Aikman et al's Gilroy 1A, (twin), SE SW NW Section 24-25s-12e, three miles southwest of Quincy in eastern Greenwood County, was spudded and shut down. Oko Oil & Gas Company's Austin 1, CSE Section 11-22s-10e, was a location.

Wolf Creek Oil Company's Lauber 1, NWc Section 35-25s-14e, was drilling below 950 feet, in Woodson County.

In Finney County, National Refining Company et al's Smith 1, CSE SW Section 2-23s-29w, was shut down at 3323 feet.

Harris-Haun and Phillips Petroleum Company's 1, SWc Section 12-21s-2w, three miles northeast of Moundridge in McPherson County, was fishing for tools at 3035 feet. Hess & Boersma's Berg 1, SE SE NE Section 15-20s-3w, had small showing of oil and gas at 3079 feet and was drilling below 3126 feet with 1500 feet of water in hole. Slick, Pryor and Lockhart's Ordineal 1, SE SW SE Section 21-20s-3w, was a rig. Phillips Petroleum Company's Tinsley 1, CSW SE Section 5-20s-1w, was shut down at 2963 feet. Wakefield and Hawkins' Smith 1, SW SW SE Section 17-17s-1w, had chat at 2649 feet; small showings of oil at 2655 to 2660 feet; first water at 2685 feet and was drilling deeper.

In Rice County, Foraker and Hutchins' Smyar 1, SE NW Section 28-20s-8w, was a cellar. Eldorado Refining Company's Wernst 1, SW SW NE Section 12-20s-6w, was dry and abandoned with a hole full of water in Siliceous lime at 3737 to 3746 feet. George Dickey et al's Hunter 1, NEc Section 36-19s-7w, formerly reported as Verne Summers et al, set 12-inch casing at 1241 feet and was drilling below 1740 feet. Slick-Pryor and Lockhart's Schmidt 1, CNW NW Section 15-18s-10w, had conglomerate at 3252 feet; show of water at 3294 feet with another show of water at 3356 to 3360 feet and was underreaming five-inch casing at 3362 feet.

Skelton et al's Ott 1, CSE SE Section 16-19s-14w, in Barton County, was shut down at 3255 feet. Gypsy Oil Company's Soderstrom 1, SW NE NW Section 21-17s-13w, was dry and abandoned at 3525 feet.

Smith, Ash et al's Wilkins 1, SEc Section 13-17s-10w, was rigged up and shut down, in Lyon County.

Western Exploration's Andrea 1, SWc Section 30-15s-12w, in southern Russell County, was drilling below 1576 feet.

In Ellis County, Ashby et al's Polycyn 1, NE SE Section 12-13s-16w, was recementing five-inch casing at 3165 feet.

Kreuger et al's Rathburn 1, SE NW SW Section 14-19s-16w, in Rush County, was shut down at 3415 feet to treat with acid.

In Rooks County, Ashby et al's Stockton 1, CSW SW Section 15-8s-19w, had rig on ground. Phillips Petroleum Company's Dopita, CSW SW Section 31-8s-17w, was underreaming 15-inch casing at 915 feet.

In Phillips County, Ashby et al's Unknown 1, CSE¼ Section 24-5s-18w, was shut down at 1950 feet.

Western Kansas Permits Lead State in Activity

Wichita, Kansas.—McPherson County led new work in Kansas with five of the 15 first reports made in the state. The western portion of the state, represented by McPherson, Ellis, Kingman, Reno, Rice and Russell Counties, had 11 of the 15 starts which are listed below.

In Butler County, Vickers Petroleum Company's Moore 1, CWL NW SW Section 36-24s-3e, is a machine. Bradley's Bush 1, CNW NW Section 21-29n-4e, is located.

Beardmore's Weiland 4, NEc SE Section 36-12s-16w, is rig timbers on ground, in Ellis County.

Polhamus' Smith 2, NW SE NE Section 6-24s-12e, is spudding in Greenwood County.

In Kingman County, Skelly Oil Company's Leisman 4, SE NE SW Section 29-27s-10w, is a location.

Goering Brothers' Decker 1, NEc SE Section 20-18s-1w, in McPherson County, is a location. Carey's Holt 4, NE SW SE Section 13-19s-2w, is located. W. C. McBride's Finkle 4, CEL E¼ SW Section 14-19s-2w, is a location. Shell Petroleum Corporation's Myers 7-B, CWL W¼ SE Section 14-19s-2w, is located. Wolf Creek Oil Company's Dunsford 2, NEC SW Section 23-19s-2w, is located.

In Reno County, Gypsy Oil Company's Krehbiel 3, CNE NE Section 35-23s-4w, is a location. Dickey Oil Company's Brughman 1, CNW NW Section 36-23s-4w, is located.

Ramsey Oil Company's Wolfe 1, in Rice County, has rig timbers on ground for Block 1, Lot 7, (approximately SW SW NE SE) SE Section 31-19s-9w.

In Russell County, Hall et al's Miller 1, NW NE NE Section 31-14s-13w, old well drilling deeper from 2901 feet, has 1100 feet of oil in hole at 2984 feet.

Fifteen Completions Made in Kansas

Wichita, Kansas.—Development in Kansas during the week resulted in nine oil wells with total initial production of 6979 barrels of oil, one dry gas well with initial volume of 4,000,000 cubic feet, and five dry holes, a total of 15 completions. Of the total of 41,543 feet of drilling completed 11 feet were in one old well drilled deeper. Reports of the week were as follow:

Company, Well and Location	Init. Prod. Bbls.		Depth
Barton County—			
Gypsy Oil, Saderstom 1, sw ne nw 21-17s-13w		*	3525
Cowley County—			
Armer et al, Wycofe 1, sw se se 8-34s-3e		¶4	1877
Roth et al, Harlan 1, se ne nw 13-31s-7e		*	2960
Greenwood County—			
Bore et al, Morris 1, swc nw 5-24s-12e		*	1830
Harvey County—			
Shell Petroleum, Voth 3, ne se nw 4-22s-3w	818		3531
Harris-Haun and Phillips, Cone 1, cnw 31-22s-3w		*	3562
McPherson County—			
Mabee, Nikkel 5B, sw ne se 33-21s-3w	1943		3492
Thurman Oil, Bridgens 3, nw se sw 2-20s-3w	248		3042
Phillips Petroleum, Grattan 2, sw se se 19-19s-1w	239		3429
Reno County—			
McPherson Gas, Goering 1, swc ne 1-23s-4w (owdd)	326		3373
Rice County—			
Atlantic Oil, Ott 1, cwl sw sw 11-19s-10w	1654		3020
El Dorado Refining, Wernet 1, swc ne 12-20s-6e		*	3746
Empire Oil & Refining, Heckel 2, nw ne sw 18-20s-9w	1621		3328
Sedgwick County—			
Aladdin Petroleum, Benningfield 4, se se sw 6-26s-1e	90		2695
Woodson County—			
Cameron, Mason 1, nw se se 14-25s-13e	40		1495

*Failures; †Junked; ¶Million cu. ft. gas.

Conservative Development Planned for Cayuga Area

Palestine, Texas.—A conservative development program for the Cayuga pool, latest addition to the long list of oil and gas areas producing from the Woodbine sand horizon in East Texas, is proposed by Tide Water Oil Company and Texas-Seaboard Oil Company, owners of the discovery well completed March 1. This northwestern Anderson County wildcat producer received a pipe line connection on March 5, and since the latter date has been pinched to about 600 barrels oil daily, flowing through a single three eighths-inch choke on tubing, with 1225 pounds tubing pressure and 1500 pounds casing pressure. The gas volume is about 3,000,000 cubic feet daily in spite of the fact that about 237 feet of the upper Woodbine section was purposely cased off by cementing seven-inch pipe at 4082 feet, or six feet off bottom.

No new locations have been announced by the partnership, and no immediate offsets are required as the producer is located 1400 feet from the north and east lines of the J. N. Edens tract and Sam Snider Survey. The owners have indicated that development work will be deferred until a plan of field operation can be perfected by all probable participating property owners and submitted to the oil code administration in accordance with rules governing new fields. In the meantime the Texas Railroad Commission has ordered temporary regulations, such as requiring a well spacing of a minimum of 466 feet from property lines, unless special exceptions are authorized, pending a hearing to be held at Palestine on March 5.

Coincident with the issuance of this well spacing rule, the commission granted permit for the drilling of a test in the Cayuga townsite area, or about one mile northeast of the producer, to W. L. Pikens, Dallas, in the center of the W. L. Tubbs 2½-acre lease, R. C. Montgomery Survey. Other tentative locations have been credited to concerns with small leases within the discovery block.

Although rated as one of the largest oil producers to usher in a new field for the Woodbine sand belt, the Cayuga discovery well is unusual in that the oil was not in evidence in the Woodbine section until the lower, or second sand was penetrated, while the most surprising development is that the oil is only 29 gravity, being six to 12 degrees lower than the gravity of other Woodbine sand fields, and is of asphalt base with a strong sulphur content. Crude produced by other Woodbine sand areas is of a paraffin base and virtually free of sulphur.

Pipe line connection was procured through the construction of a 2800-foot six-inch lateral line from The Texas Pipe Line Company's Mid-Continent trunk line system, and the oil is being moved to storage at Corsicana.

The first of a group of wildcats to be drilled in general vicinity of the Cayuga strike is the southwestern Henderson County test of Humble Oil & Refining Company and Gulf Production Company's E. F. Cook-Richardson 1, Earl Pierce Survey. This wildcat started drilling after the completion of the Cayuga well, and late last week had drilled below 3900 feet. It logged Pecan chalk at 2729-2869 feet, and top of Austin chalk at 3835 feet, with an elevation of 482 feet, indicating a normal structural condition that points to another dry hole for the Athens area.

A second producing structure from the Woodbine horizon in the Buffalo area, Leon County, loomed late last week when Shell Petroleum Corporation et al's G. W. Lee 1, Wm. Simpson Survey, cored into sand at 5211-5235 feet indicating the presence of gas and an odor of oil. This outpost is about 5¾ miles north by east of the group's completed gaser on the Beggs tract, and five miles north by east of their A. Jones 1, J. F. Sumralls Survey. The latter topped the Woodbine section at 5745 feet, or 5352 feet below sea level, and plugged back from 6024 feet to 5970 feet to complete as a gasser. Lee 1 encountered the Woodbine section at a sub-sea depth of 4920 feet, and is conceded to be on an entirely separate structure from the discovery well and the test about ready to complete after plugging back, as forecasted by revised geophysical information on the area.

East Texas Refiners Take Steps to End Gas Wars

Tyler.—Restoration of a stable market situation on crude and gasoline in the East Texas field appeared promising towards the end of the past week as result of independent refiners having taken definite steps towards ending the destructive gasoline price wars that have gripped a large section of the state in recent weeks. This move to stop the flow of distressed priced gasoline originating from plants within and adjacent to the field preceded Governor Miriam A. Ferguson's action on March 9 in approving a legislative measure that gives the Texas Railroad Commission authority for the first time in checking the records of refining plants.

Suffering from a heavy loss in gasoline gallonage in Dallas, Fort Worth, Houston and throughout the eastern portion of the state because of the decline of retail prices on third grade product to 10 and 11 cents, with the majors generally quoting an eight-cent tank wagon price, including five-cent tax, the East Texas refiners sought a termination of the price war last week. This group had previously formed the Independent Refiners Association of East Texas to function in stabilizing prices. The majority of the plant owners are supporting the body, but there are sufficient holdouts to cause trouble in carrying out their plans to uphold prices. This new East Texas organization is headed by Jules Constantin, an official of the Constantin Refining Company, Overton; A. G. Taylor, sales manager for Texas Oil Producers, Gladewater, and John Wrather, president, Overton Refining Company and Kilgore Refining Company, are vice presidents. L. B. Haberle, Chief Refining Company, Gladewater, is treasurer. Members are pledged to boycott tank truck dealers and all other customers that supply retail stations which fail to abide by the 15-cent retail price agreed upon for most cities and towns in the trade territory. As a tieup for their ambitious program in restoring prices to a profitable basis for plants operating on posted priced crude these East Texas plant owners have been successful in including wholesale and retail dealers in the principal consuming points to setup local organizations to enforce the minimum price agreement. Plans are for each local body to have a paid secretary and tank truck owners caught supplying gasoline price cutters will be reported promptly to the secretary of the refiners organization which will notify all members to refuse to sell gasoline to truckers that supply price breakers.

Two Cass County Wildcat Tests Abandon Search

Tyler, Texas.—Three failures and a producer composed the list of wildcat completions credited to East Texas during the past week, with the latter marking the beginning of a new oil and gas field at Cayuga, located in Northwestern Anderson County. However, this Cayuga strike was unofficially completed the previous week when preliminary gauge proved it to be one of the largest discovery wells ever completed in the district.

Cass County was stripped of its only two active tests when Broderick & Calvert, Inc., et al's Cagle 1 was ordered abandoned after developing a junked hole at 3830 feet, and the wildcat test of S. A. Pace and T. H. Pardoe on the S. A. Orr tract quit at 3881 feet. Another test may be drilled near the Cagle junked hole, according to Geo. Calvert, an official of the company sponsoring the search for production in the Woodbine horizon, and definite decision will be made within 10 days.

Summary of active wildcat operations in the district follows:

In Anderson County, Byrd-Frost, Inc., et al's Mrs. Alice Scott-Pure 1, (300 acres), Jas. Crawford Survey, has cemented surface pipe. Burton Drilling Company's Church Lot 1 (2 acres), W. T. Meredith Survey, Cayuga area, is a location. W. L. Pickens et al's W. L. Tubbs 1 (2½ acres), R. C. Montgomery Survey, Cayuga area, is a location. Tide Water Oil Company and Texas-Seaboard Oil Company's Monnig Bros. 4, Long Lake area, logged Austin chalk at 4612-4880 feet, with an elevation of 220 feet, and top of Woodbine section at 5131 feet. Drilled to 5278 feet and shut down to cement seven-inch casing at 5272 feet. Monnig Bros. 5 logged top of Pecan chalk at 3555 feet and first Austin chalk at 4658 feet, with an elevation of 230 feet, and drilling below 4840 feet.

The Cass County test of Broderick & Calvert, Inc., et al on the I. J. Cagle 154-acre tract, H. Cunningham Survey, logged Pecan chalk at 2315-2810 feet and Austin chalk at 3430-3591 feet, with an elevation of 351 feet, and junked at 3830 feet.

S. A. Pace and T. H. Pardoe's S. A. Orr 1 (316 acres), G. W. Morris Survey, logged Pecan chalk at 2340-2820 feet, with an elevation of 381 feet, and was dry and abandoned in sand at 3881 feet. Remley-Nelley and R. Kamon Group's No. 1's Mrs. I. O. Savage 1 (121 acres), Mary Patterson Survey, was moving in materials.

In Freestone County, Clyde Creighton & Company's W. A. Holley 1 (80 acres), A. B. & M. Survey A-51, topped Pecan chalk at 3830 feet, with an elevation of 384 feet, has shut down for casing at 5138 feet.

In Henderson County, J. Roy Black, Darby Petroleum Company et al's C. B. Meredith 1, Wiley Kay Survey, is a location. Great State Oil Corporation's R. S. Ansley 1, N. B. Thompson Survey, erected derrick and shut down. Humble Oil & Refining Company and Gulf Production Company's E. F. Cook-Richardson 1 (232.71 acres), Earl Pierce Survey, logged Pecan chalk at 2729-2869 feet, with an elevation of 482 feet, and was drilling shale at 3520 feet.

In Houston County, Mur-Mac Oil Company's D. L. Murray 1, John Durst Survey, remains inactive at 3100 feet. H. B. Thornton, H. Thompson et al's T. W. Harrison 1 (135½ acres), J. Masters, Sr., Survey, logged Pecan chalk at 5489-5780 feet, with an elevation of 453 feet, and top of Austin chalk 6328 feet. Dry and abandoned at 6675 feet.

The Lamar County test of Cole and Waggoner on the W. B. Martin 132-acre tract, J. Deck Survey, is cleaning out at 2445 feet.

In Leon County, Shell Petroleum Corporation et al's A. Jones 1 (160 acres), J. F. Sumralls Survey, topped Woodbine sand section at 5745 feet, with an elevation of 393 feet, drilled to 6031 feet, plugged back to 5970 feet and cemented casing to complete, probably as gasser. G. W. Lee 1, Cooper Survey, North Buffalo area, logged Pecan chalk at 3860-3920 feet and Austin chalk at 4862-5148 feet, with an elevation of 291 feet. It was drilling in sandy-shale at 5520 feet.

In Limestone County, C. M. "Dad" Joiner et al's S. A. Knapp 1 (676¼ acres), Luke Moore Survey, tested dry and shut down at 990 feet. J. Rogers et al's V. DeLong 1, spudded and shut down.

The Navarro County test of Jaybee Oil Company on the C. S. West tract, M. Boren Survey, was drilling below 3000 feet.

In Rusk County, G. A. Hathaway et al's Gray 1, Jas. McLain Survey, topped first Georgetown lime at 3140 feet, with an elevation of 315 feet, and is standing at 4403 feet pending sale of interest in block. Walker Murray et al's J. H. Phillips 1 (20 acres), N. Villareal Survey, spudded and shut down.

In Upshur County, Protho et al's (was B. F. Traywick) Vaughn 1, spudded and shut down. Otto L. Morris et al's F. L. Bradley-Sun 1 (41 acres), Jas. Scott Survey, logged Pecan chalk at 2307-2875 feet and trace oil in sand at 3125-3200 feet and 3320-3470 feet, then shut down for fuel at 3580 feet.

In Van Zandt County, C. A. Gilliam, Virgil Whitworth and Arthur Allen's A. T. Bass 1 (16 acres), Wm. Hart Survey, cemented surface pipe. Griffith Brothers et al's Bruce-Gibbard 1-A (134 acres), G. Martinez Survey, is preparing to skid rig from junked hole at 1652 feet.

In Wood County, D. T. Cauble and Mrs. J. C. Thompson's N. G. Bobbett 1 (50 acres), Daniel Fuller Survey, logged Pecan chalk at 2902-3242 feet and solid Austin chalk at 4420-4683 feet, with an elevation of 502 feet; was fishing casing and drill pipe, with a total depth of 4990 feet.

Marshall, Texas.—Thomason Drilling Company completed a small gas well last week in the old Bethany gas field of Panola County, East Texas. The well is Thomason Drilling Company's Furrh-Tiller 1, Jane Thorpe Survey, located in the center of a 22-acre square tract of the P. Brown tract a direct north offset to the Martin Brown tract. It showed for one half million cubic feet of gas daily at 2390 feet after three-inch tubing with packer was run at 2339 feet. Acid may be used later, as has been done on several previous recent tests that this company has drilled in this locality.

Cayuga Hearing Called for Drafting Permanent Rules

Austin, Texas.—A hearing has been called by the Texas Railroad Commission for the purpose of obtaining evidence on which will be based permanent rules for the spacing, drilling and completion of wells in the new Cayuga pool, Anderson County. The hearing is to be held at Palestine, Texas, on March 15.

Temporary rules have been ordered for the field, the commission promulgating the same requirements now in effect in the Long Lake field in the same county.

These rules permit the drilling of only one well to 20 acres, 466 feet from lease lines and 933 feet apart. They became effective on March 4. Complete specifications for setting casing, cementing off water sands, and control of gas are included.

East Texas Has 200 Active Operations Listed

Tyler, Texas.—An aggregate of 56 oil producers were scored in the East Texas field during the past week, as compared to 58 completions for the previous seven-day period. Field activity is gaining in volume because of new tests having exceeded the number of completions for more than a month, and at present approximately 200 operations are listed on the report covering the field. About 100 tests are drilling or in process of completion, while the remainder are those temporarily shut down, or identified as locations, derricks and rigs.

Adverse weather conditions have hindered drilling activity in many sections of the field, causing a greater elapsed time to be consumed in the drilling of wells. The rate of completions are quite certain to increase to an average of between nine and 12 daily as soon as relief is had from the heavy rainfall.

Walter H. Gant, Garvin and Wegener, Ardmore, Oklahoma, operators, continue to try for minor eastward extensions to the productive limits of the Joiner section of the field with considerable success. Their L. E. and O. Edwards 1, located in southwest corner of 50-acre lease, M. V. Pena Survey, cleared the way for the drilling of more tests by swabbing 26 barrels of oil per hour from sand at 3629-3647 feet.

Completions in the East Texas field for the past week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
R. H. Dearing & Son, A. P. Finney (39.7-ac) 5	750	3670
W. H. Gant, Garvin & Wegener, Edwards (50-ac) 1	600	3647
Gulf States Dev. Co., S. S. Cook (10-ac) 2-A	7600	3745
Humble, S. A. Plowman (228½-ac) 28-A	7500	3702
W. L. Price (432-ac) 35	9000	3722
Lucey Pet. Co., B. F. Maxwell (94-ac) 9	2500	3700
Magnolia, Irion Wright (81.9-ac) 16	10,000	3686
Alex McCutchin et al, G. Moore 1	7000	3816
T. O. Wright (2½-ac) 3	7600	3710
Mid-Kansas, E. E. Moores (201.4-ac) 18	3000	3731
Jim Lunsford (70.3-ac) 7	8500	3701
Sinclair Prairie, A. S. Jarvis (264-ac) 23-A	9000	3684
A. S. Jarvis (264-ac) 24-A	8800	3676
A. S. Jarvis (264-ac) 26-A	8000	3701
A. S. Jarvis (256-ac) 25-C	8400	3690
Solar Oil Co., M. Watkins 2	2000	3725
Sklar Oil Co.-Louisiana Pipe & Supply Co., W. H. Arnold 1,	¶1½-300	3694
Sun Oil Co., R. L. Henson (54.2-ac) 5	7200	3714
O. W. Knight (264-ac) 16	7000	3632
Ward Oil Corp., E. S. Thrash (200-ac) 23	8000	3752
Kilgore Area—		
Atlantic & Byrd-Frost, Hughey (105-ac) 11	9000	3643
J. Beren et al, Major Kennedy (10-ac) 1	5000	3667
Delta Drl. Co., Clayborn 1	9200	3677
Devonian Oil Co., R. A. Motley (282.35-ac) 20	8500	3696
Gulf, C. Brown (254½-ac) 18	8000	3536
A. Laird (54.31-ac) 9	8000	3640
Humble, S. S. Laird (568½-ac) 48-B	5000	3587
Quad Corp., Duncan-Guernsey (40-ac) 4-A	5400	3668
Hiram M. Reed et al, Roger Lacy (8½-ac) 4	9600	3600
Max Rubin & Nadel, D. Willis-Shell (86-ac) 5	6500	3664
Reserve Dev. Co., T. B. Blackman (20-ac) 3	7200	3614
J. S. Rushing et al, Geo. Thompson (10-ac) 3	9000	3675
Shell, John Douglas (94½-ac) 9-A	7600	3615
Sinclair Prairie, S. G. Andrews (200-ac) 16	10,000	3498
A. A. King (366.7-ac) 33-A	9000	3503
Texas, H. T. Elder (53.6-ac) 16	6000	3620
Tide Water, J. M. Blackman (80.87-ac) 8	8600	3630
F. L. Buntyn (43.83-ac) 8-A	10,000	3669
Trans-State Oil Co. (Whittle et al), Watson (14½-ac) 5	9200	3621
R. A. Wolfe & Marine Prod. Co., M. T. Cole (33.8-ac) 6	9000	3549
Longview Area—		
Amanda Oil Co., Geo. Jones (40-ac) 6	8600	3580
Amerada, Continental Bank (98.3-ac) 8	7300	3601
Arkansas Fuel Oil Co., F. K. Lathrop (58.82-ac) 6-B	8400	3597
M. & S. G. Smith (60-ac) 4	12,000	3489
Atlantic & J. K. Wadley, H. L. Foster (31-ac) 4	8000	3630
Barnsdall-Houston, McGrede (109-ac) 9	12,000	3673
Deep Rock Oil Corp., B. Jones (61.12-ac) 7	11,000	3646
Gregg Oil Co., T&P Ry. (5½-ac) 2-K	9400	3550
Island Oil Co., J. W. Akin (28½-ac) 5	12,000	3575
W. W. Lechner & G. E. Hubbard, J. M. Tuttle (24.65-ac) 4	9600	3565
Navarro Oil Co., E. L. Walker (30-ac) 8	8000	3612
Sinclair Prairie, W. H. York (86.45-ac) 5	9800	3587
Stanolind, W. M. Harley 3-C	8600	3661
Stodel Oil Co. (Stoddard-Delaney), McKinley Bros. (20-ac) 4	8300	3645
Tide Water, W. E. Jones (80-ac) 8	8500	3659
Yount-Lee, M. M. Custer (75.34-ac) 5	8800	3580
East Texas Wildcats		
Anderson County—		
Tide Water Oil Co.-Texas Seaboard Oil Co., J. N. Edens 1	¶12-15,000	4088
Cass County—		
Broderick & Calvert, Inc., I. J. Cagle 1	†	3830
S. A. Pace and T. H. Pardoe, S. A. Orr 1	*	3881
Houston County—		
H. B. Thornton, H. Thompson et al, T. W. Harrison 1	*	6675
Panola County (Bethany)—		
Thomason Orl. Co., Furrh-Tiller 1, Jane Thorpe Sur.	¶½	2390
Van Field		
Pure Oil Co., J. F. Crim (40-ac) 6	5000	2956
Hartt Pet. Co. (2-ac) 1	12,000	2945

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Refinery Blast Fatal to Two

Tyler, Texas.—Two men were fatally burned and two other workmen were critically injured at Upshur Refinery Company, Inc.'s 1000-barrel capacity crude skimming plant in the Gladewater section of the East Texas field on March 7. Percy W. Leeland and Roy Owens were killed, and E. F. Stanley and A. C. Gratz were seriously burned by the blast. P. B. Goodwin, part owner of the company, was killed last November by an explosion in a

nearby natural gasoline manufacturing plant. Nearly a score of major fires and explosions have occurred in the East Texas natural gasoline plants and refineries within the past two years, accompanied by a heavy toll of lives of workmen.

Gladetex Refining Corporation's 1500 barrel capacity skimming plant near Gladewater was virtually destroyed by fire on February 27. Plans are to rebuild this refinery, which was formerly known as the Amicus Curiae Refineries, Inc., or Gladetex Refining Company.

West Texas Areas Are Given Increased Allowables

Austin, Texas.—Increased allowables for West Texas oil fields totaling 8278 barrels per day, brought the total Texas allowable to 950,302 barrels per day, effective Wednesday, March 7.

The new figure is 2402 barrels higher than the allocation of 947,900 barrels per day, recommended by the Bureau of Mines for the month of March, and 24,648 barrels higher than the allowable on February 5.

However, at the hearing held in Austin, where the March recommendation was made, E. B. Swanson, chief of the Bureau of Mines stated that the allocation could apply throughout the remainder of February without disturbing the national consumer demand picture as seen by bureau statisticians. This statement was made on February 19, but the commission took no action on allowables until the order effective March 7 was issued.

Current orders for various districts of the state call for daily production as follows:

District—	Allowable Feb. 5	Allowable March 7	Increase
Panhandle	52,000	52,000	....
North Texas	56,500	56,500	....
West Central Texas	26,500	26,500	....
Gulf Coast	160,592	160,592	....
Southwest Texas	46,762	46,762	....
West Texas	124,104	132,382	8,278
East Central Texas	43,797	43,797	....
East Texas	415,399[1]	431,769[2]	16,370
Total	925,654	950,302	24,648

[1] Allowable for East Texas on February 1, 1934.
[2] Allowable for East Texas on March 5, 1934.

The allowable for East Texas on March 5 was 431,769 barrels per day, and was distributed among 12,485 producing wells. It is based on five percent of the hourly potential of 8,498,295 barrels. This allowable includes a minimum allocation of 20 barrels each for the 1371 marginal wells producing in the field at that time.

Increases in West Texas allowables were ordered by the commission to adjust allocations between fields and to obtain more efficient rates of flow for wells there.

Adjustments were made as indicated by the following table:

Field—	Order of Jan. 15	Order of March 7	Inc.	Dec.
North Cowden	881	1,100	219	...
South Cowden	406	600	196	...
Ector-Harper	150	100	...	50
Howard-Glasscock	13,300	17,500	4,200	...
Iatan-East Howard	1,900	1,200	...	700
Leck	400	600	200	...
Pecos Valley	266	300	34	...
Scarborough	1,000	1,500	500	...
Taylor-Link	660	800	140	...
Tobarg	985	1,015	30	...
Ward County	6,150	...	3,361	...
North Ward	...	3,500	...	...
South Ward	...	4,800	...	...
Westbrook	...	1,211	...	...
World	600	750	150	...

Allowables remain unchanged in fields not listed above.

The Iatan-East Howard area designated in the order was formerly carried as Mitchell-Scurry and East Howard.

Ward County has been divided into three fields and an allowable given to each. This was done to permit equitable distribution between the various producing areas of the county. Formerly new completions in one section resulted in unfair reductions in the allowables of wells in the other districts. The Westbrook area is marginal production entirely.

Distribution of the allowable in the North and South Cowden fields has been revised under provisions of the order. Allocations will be made based on acreage and potential, 50 percent to each factor. Units of 40 acres will be used in determining the allocation to be made on acreage.

As a result of this order, the allowable for the district is increased from 124,104 barrels per day to 132,382 barrels, a total of 8278 barrels daily.

West Central Texas New Wells Add Little Output

Ranger, Texas.—Completions reported from West Central Texas last week included six shallow oil producers and 12 dry holes. An aggregate of 234 barrels of new production was added during this period, with Brown and Shackelford Counties sharing equally the number of wells that made production upon completion.

Detailed list of completions in West Central Texas for past week follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
Lewis Green et al, F. E. Gordon 2	9	1782
R. C. McCarter et al, Densman 1-B	*	1169
L. L. Shead, H. H. Simons et al, Hickman-Reaves 2-A	15	1290
S. B. Owens et al, R. Lynch 12	40	1279
Callahan County—		
Ungren-Frazier & Byron, Jackson 1, Sec. 20	*	1248
Coleman County—		
W. E. Neal et al, Newton 1	*	1614
H. Winters et al, D. E. Purcell 1	*	2637
Comanche County—		
Robt. T. Hill et al, R. W. Gray 1	*	3525
Shackelford County—		
Callahan & Brewer, Jeter 7.	*	1260
Dean & Atkinson, W. P. Newell 1	20	1352
W. D. Dilbeck et al, N. M. Mimms 1	*	1785
Gilman & McMurray, Jeter 2-B	*	1256
Knight et al, E. A. Jeter 4	100	1193
Roy Shyrock et al, Brooks 2	*	577
Worth Pet. Co., Jeter 2	50	920
Eastland County—		
Wylie Harbin et al, M. J. Harbin 2	*	1220
Palo Pinto County—		
W. K. Gordon et al, John McClure 1	*	4350
Stephens County—		
Shertzer Bros., Stewart 5	*	1846

*Failures; †Junked; ¶Million cu. ft. gas.

Good Yates Well Boosts West Texas Initial Average

San Angelo, Texas.—West Texas accounted for six oil producers and two wildcat failures during the past week, with the former yielding 76,175 barrels of new production.

This rather high quota of new production was made possible by an exceptionally large well in the main part of the Yates field, plus better than average completions from Ward and Winkler Counties. Mid-Kansas Oil & Gas Company's I. G. Yates 36-A, located on the discovery lease of the Yates field, was rated at 3058 barrels of oil per hour on official proration gauge from regular lime at 1173-1416 feet. This company's Fred Turner 3, Tract 4, gauged 29 barrels oil per hour after plugging off bottom hole water at 1270 feet and completing in lime at 1128-1253 feet.

Detailed list of completions in West Texas during past week follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Pecos County-Yates Field—		
Mid-Kansas, I. G. Yates 36-A	73,390	1416
Fred Turner 3, Tract 4	695	1270
Runnels County—		
J. D. Wesner & Wahlenmaier Pet. Corp., T. C. Hall 1	*	2600
Taylor County—		
E. Guthrie Shawl et al, Clem Smith 1-A	*	2115
Ward County—		
S. Caprito et al, J. B. Bennett-Pure 2	540	2530
Gulf, G. W. O'Brien 41	625	2754
S. A. Thompson et al, W. D. Johnson 6	505	2530
Winkler County—		
Sid Richardson et al, W. F. Scarborough 6-A	420	3030

*Failures; †Junked; ¶Million cu. ft. gas.

Panhandle Output Raised To Make Up Deficit Flow

Pampa, Texas.—Eleven completions contributed by five counties in the Texas Panhandle last week included eight oil producers and three dry gassers, having an aggregate initial output of 970 barrels of oil and 74,000,000 cubic feet of gas.

Allowable production for the district has been permitted to surpass the proration quota of 52,000 barrels daily lately in order to make up the deficit on production during the fore part of February.

Completions for past week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Skelly Oil Co., H. Schafer-West 25	190	3165
H. Schafer-West 27	35	3175
Gray County—		
Skelly Oil Co., H. L. Webb 4-A	100	2552
Southern Pet. Explor., Inc., J. S. Baird 3	320	3257
The Texas Co., J. C. Short 1	225	3050
Hutchinson County—		
Deahl O&G Co., J. M. Sanford 2	¶12	2675
Phillips Pet. Co., Wm. Yake 2	45	2757
Sinclair Prairie Oil Co., C. Merchant-Vacuum 3	¶3-25	2898
Travelers Oil Co., W. B. Haile 1	30	3091
Moore County—		
Shamrock O&G Co., W. W. Burnett-Gulf 1-A	¶14	5545
Wheeler County—		
Dyke Oil Co., S. Wingo 1	¶45	2125

*Failures; †Junked; ¶Million cu. ft. gas.

Field Work in West Texas Increases

San Angelo, Texas.—Field work in West Texas is taking on the semblance of a mild boom as result of the steady growth in volume of drilling activity enjoyed since the start of the year. Wildcat projects are particularly numerous, including many tests that are to explore structures that have a high geological rating. Based on the law of averages, this widespread search for additional oil reserves in the Permian lime belt should yield one or more new areas.

No single field is a standout on new drilling, but a good gain in operations has been noted in recent weeks in Ector, Howard, Glasscock, Upton, Pecos, Ward, Runnels and Loving counties. This activity provides work for rotary and standard rigs and machines, thereby materially stimulating demand for labor and various types of equipment.

Along with expansion of activity scheduled to explore the regular producing horizons, a greater interest is being taken in projected deep tests, particularly those intended for the Ordovician lime horizon. The latter has been found productive to date only in the Big Lake field.

Development work in the Big Lake field is now at a standstill, and the only immediate deep completion on tap is the Upton County Ordovician test of Gulf Production Company and that of Humble Oil & Refining Company in Pecos County. The latter's White-Baker 1, a wildcat, was drilling late last week in the Pennsylvanian section at 8135 feet, logging gray lime. Gulf Production Company's J. T. McElroy 103, located amid production in the Church-Fields and McElroy area, Upton County, was drilling in black shale at 9215 feet, cutting a 9⅞-inch hole. This test has cored more than 1500 feet of hole since entering the Pennsylvanian, and now alternates with core barrel and rotary bit.

Humble Oil & Refining Company has completed a large block of leases situated east of the Noodle Creek field, Jones County, for the purpose of starting a deep test in the near future. This project will have the support of a favorable geophysical survey, with possibilities of production in the Pennsylvanian or Ordovician.

Humble Oil & Refining Company is setting the pace for all majors in acquiring additional lease protection and actual drilling in West Texas, having two tests, including a wildcat, in Andrews County. The company has started drilling on its J. W. Kuykendall 1, located 1980 feet from the south and east lines of Section 24, Block A-46, P. S. L. Survey, offsetting Tripplehorn Brothers et al's producer on the same tract. The latter acquired the well along with three others and a small amount of surrounding leases in 1932 from Atlantic Oil Producing Company, The California Company and Deep Rock Oil Company for $7,000. The latter trio withdrew from the area after trying since the completion of their discovery well in the 4400-foot lime in December, 1929, to attract a pipe line connection for their wells. Humble Oil & Refining Company is also to start drilling shortly on its R. M. Means 1, an Andrews County wildcat located 660 feet from the south and east lines of Section 2, Block A-35, P. S. L. Survey.

North Texas Completions Reflect Scope of Activity

Wichita Falls, Texas.—An aggregate of 5923 barrels of new production was added by North Texas during the past week through completion of 45 tests, including 31 producers, 11 failures, two junked holes and a small gasser. This activity establishes a new peak on the number of completions for a seven-day period since the first of the year, and reflects the steady growth in field operations that have been in evidence for several months.

Archer County contributed its usual heavy quota of prolific shallow oil wells from areas that produce from the lime horizon after treatment with acid solution, while a substantial gain has been noted lately in Young County.

Completions in North Texas during the past week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
C. W. Boller et al, Perkins-Farmer 13-A, Blk. 32	100	1400
Bonner Oil Co., Abercrombie 4-D	*	1209
Walter D. Cline, P. P. Durham 1	*	1608
Cullum & Alexander, Falls-Gulf 6, Blk. 14	800	1115
Falls-Gulf 7, Blk. 14	250	1111
Continental, Falls County 5-E	500	1113
Fain-McGaha Oil Corp., W. J. Logan 15	75	1128
H. D. Gray, J. R. Parkey 1, Lot 2, Sec. 1	15	1738
G. I. Oil Co., Perkins-Farmer 2, Blk. 32	55	1404
Gray Drl. Co., W. Ferguson 4	*	690
W. B. Hamilton et al, W. C. Coffield 10	300	1265
W. I. Pace 11, Blk. 99	215	1180
W. M. Houston, W. P. Ferguson 1	*	670

(See next page)

Company, Well and Location	Init. Prod. Bbls.	Depth
C. B. Long et al, Logan 5, Blk 23	250	1159
W. E. Maxson, Jr., Perkins-Farmer 1-B, Blk. 25	160	1496
Perkins-Cullum Oil Co., Falls-Boyles 13, Blk. 7	50	1164
Falls-Hanzen 10, Blk. 18	1000	1111
Pois & Schultz, C. L. Abercrombie 4	45	1182
F. C. Green 17	500	1137
Rathke Oil Co., S. M. J. Benson 1-A, Sec. 1808	150	943
Stuckey O&G Co., Ward Bros. 1	100	962
The Texas Co.-Consolidated Oil Co., Coody-Abercrombie 4	100	1156
W. G. Tullis, W. L. Andrews 1, Sec. 1826	*	965
Womac Oil Co., Perkins-Farmer 3, Blk. 17	100	1492
Cooke County—		
Fain-McGaha Oil Corp., J. Hofbauer 1, Blk. 9	*	2004
Montague County—		
Bridwell Oil Co., F. H. Begley-Pure 2-B	750	1784
Throckmorton County—		
Dickey Bros., J. O. Sanders 1	¶½	757
Young County—		
C. E. Beavers, Jr., G. R. Smith 1, Sec. 1365	†	534
G. R. Smith 1-A, Sec. 1365	*	802
Beavers-White & Duncan, Remington-Belknap 2, Sec. 2248	†	564
Remington-Belknap 2-A, Sec. 2248	30	582
Fresno Oil Co., C. Baldwin 2, Sec. 20	10	669
S. D. Glover et al, C. W. Johnson 8	7	525
C. W. Johnson 9	5	541
Gunsight Oil Co., F. V. Hinson 9, Sec. 1448	*	852
Invincible Oil Co., Morrison 1	6	4350
King Royalty Co., C. W. Johnson 14-A, Blk. 14	10	568
C. J. Kleiner et al, Belknap 9, Sec. 21	50	698
L. A. Long et al, J. R. Garvey 4	50	761
R. M. Williams 3-C	150	2560
Pitzer & West, Robt. Morrison 2	85	3970
Producers Tool & Supply Co., Finch 10, Sec. 31	5	659
Randall et al, S. Clayton 1, Sec. 3401	*	753
Simms Oil Co., J. D. Carpenter 1-C	*	1040
White & Duncan, B. L. Cunningham 1, Sec. 2	*	602

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Still Leads as Permit List Is Shorter

Austin, Texas. — Dropping back to 176 wells for the week, permits in Texas were again at the approximate rate that has maintained since the first of the year, the totals still running far ahead of last year. East Texas counties still continue to reflect the most activity.

Details for the week of latest report follow:

In Anderson County the following permit was granted: W. L. Pickens, Dallas, W. L. Tubbs 1 (2-ac), R. C. Montgomery Survey, 205 feet from west and 155 feet from north line of lease.

In Andrews County the following permit was granted: Humble Oil & Refining Company, McCamey, R. M. Means 1 (160-ac), PSL Survey No. 2, 660 feet from north and east lines of lease.

In Archer County the following permits were granted: E. B. Clark, Wichita Falls, E. Justice 1 (20-ac), W. H. Patton Survey, Block 6, 150 feet from north and east lines of lease. Horwitz & McDaniel, Wichita Falls, S. M. J. Benson 7 (80-ac), TE&L Survey 1808, 150 feet from east and 643 feet from south line of lease; No. 6, 150 feet from north and west lines of lease. George L. Pace et al, Duncan, Okla., Arnold 8 (320-ac), J. Levin Survey, 150 feet from south and east lines of lease; No. 9, 150 feet from east and 450 feet from south line of lease. Freeman-Hampton Oil Corporation, Wichita Falls, Farmer Ranch 1 (40-ac), Block 43 Perkins Subd., northwest corner of lease. L. T. Burns, Wichita Falls, J. T. Longley 1 (80-ac), Longley Survey, 1028 feet from north and 150 feet from east line of lease. Fain-McGaha Oil Corporation and Humble Oil & Refining Company, Wichita Falls, W. J. Logan 18 (320-ac), J. M. Taylor Survey 26, 1425 feet from west and 150 feet from north line of lease. A. R. Dillard, Wichita Falls, F. C. Green 3 (365-ac), J. Levin Survey, 300 feet east of No. 1. Rathke Oil Company, Wichita Falls, S. M. J. Benson Estate B-1 (40-ac), TE&L Survey, Block 1808, 783 feet from north and 1094 feet from east line of lease. W. F. Krause, Graham, Z. G. Scott 1 (320-ac), TE&L Survey, Block 1891, 700 feet from north and 1525 feet from east line of lease. Continental Oil Company, Wichita Falls, F. C. S. L. "E" 7 (50-ac), FCSL Survey, Block 18, 200 feet from north and east lines of S½ of lease; No. 6, 150 feet from south and east of S½ of lease. United Producers Company, Wichita Falls, W. J. Logan Estate 2 (101-ac), J. M. Taylor Survey 22, 225 feet from south and 637 feet from east line of lease. F. P. Cullum et al, Wichita Falls, W. J. Logan Estate 5 (60-ac), J. M. Taylor Survey, 150 feet from west and 200 feet from south line. Deep Oil Development Company & Lindsay Drilling Company, Wichita Falls, L. W. McCrory, Tr., 4 (80-ac), ATNC Survey, Lot 1, Block 119, 660 feet east of No. 3. Schulz & Weaver, Wichita Falls, F. C. Green 18 (160-ac), J. Levins Survey, 1640 feet from west and 450 feet from south line of lease. Simms Oil Company, Dallas, W. R. Farmer "C" C-1 (160-ac), N. Anderson Ranch Survey, Block 11, 200 feet from southeast corner of lease. W. B. Hamilton, Wichita Falls, C. W. Coffield 11 (400-ac), J. Levin Survey, 150 feet from south and 450 feet from west line of lease. Petroleum Producers Company, Wichita Falls, J. T. Richardson 1-C (82-ac), S. Anderson Ranch Survey, Block 1, 854 feet from west and 200 feet from north line of lease. Perkins Cullum Oil Company, Wichita Falls, E. R. Boyles 14 (101-ac), FCSL Survey, Block 7, 200 feet from north and 1108 feet from east line of lease; H. C. Hanszen 12 (179-ac), FCSL Survey, Block 18, 200 feet from north and east lines of lease; No. 13, 530 feet from north and 200 feet from east lines of lease. G. B. Long, Wichita Falls, W. J. Logan Estate 6 (162-ac), J. M. Taylor Survey, 1889 feet from east and 550 feet from south line of lease.

In Brazoria County the following permits were granted: Henry Wisdom, Damon, Jackson 2 (44-ac), A. Darst Survey, Block 5, northeast of No. 1. Producers Prospecting Corporation et al, Dallas, P. Maraschin 1 (5-ac), HT &B Survey, Block D, 150 feet from northeast and 111 feet from east line of lease. Burton Drilling Company, Dallas, A. F. Beddoe 1 (3-ac), HT&B Survey 23, Tract 29, 150 feet from south and east lines of lease.

In Brown County the following permits were granted: Sherwood B. Owens, Brownwood, W. J. Lynch 13 (114-ac), M. Little Survey 40, 150 feet from north and 950 feet from east line of lease. Jamison, Pollard & Forster,

Coleman, J. Byler 9 (101-ac), T&NO Survey 43, 150 feet from west and 450 feet from south line of lease. L. L. Shead, H. H. Simons & P. K. French, Brownwood, Mrs. B. R. Hickman, C. H. & A. J. Reaves Estate 1 (65-ac), Wright Survey No. 632, 400 feet from north and 1425 feet from west line of lease. S. C. Herring, Brownwood, L. D. Scott 1 (164-ac), W. K. Dalton Survey 57, 500 feet from east and 160 feet from south line of lease.

In Callahan County the following permits were granted: Atkinson, Sandefer et al, Breckenridge, I. N. Jackson 2 (200-ac), BBB&C Survey 115, 450 feet from east and 150 feet from south line of NW¼ of lease. Baird Oil Company, Moran, S. E. Warren 8 (40-ac), TE&L Survey 2039, 150 feet from south and east lines of lease.

In Cherokee County the following permit was granted: Droppleman Drilling Company, Wawoha, Okla., A. Kelly 1 (21-ac), M. de los S. Coy Survey, 330 feet from north and east lines of lease.

In Clay County the following permit was granted: L. S. Dennis, Wichita Falls, J. R. Marbitzer 1 (191-ac), J. K. Parker Survey, Block 2, 150 feet from south and west lines of lease.

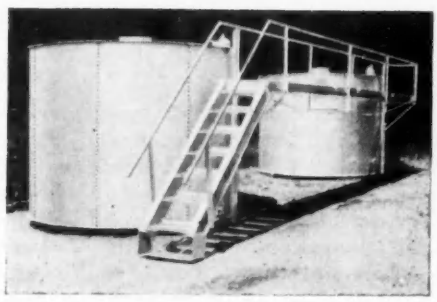
In Coleman County the following permit was granted: A. A. Buzzard, San Angelo, G. R. McClure 1-B (326-ac), E. T. RR. Survey 105, 150 feet from north and east lines of lease.

In Duval County the following permits were granted: Continental Oil Company, Ft. Worth, R. Driscoll Estate A-1 (640-ac), Survey 448, 180 feet from south and 1370 feet from east line of lease. Chiquita Oil Company, San Antonio, Richardson 1 (560-ac), Survey 454, 330 feet from north and east line of lease. Magnolia Petroleum Company, Dallas, A. L. Tankersley 1 (40-ac), J. Poitevent Survey 46, 330 feet from north and west lines of lease; Mag. Duval Ranch 21 (960-ac), J. Poitevent Survey 208, 660 feet east of No. 14; A. Lundell 8 (160-ac), J. Poitevent Survey 60, SE¼, 330 feet from north and west lines of lease. E. B. Cox & J. L. Hamon, Ardmore, Okla., State 3 (126-ac), J. Poitevent Survey 60, 330 feet from north and east lines of lease; No. 4, 666 feet west of No. 3. The Texas Company, Houston, D. C. R. Company Fee 6 (160-ac), J. Poitevent Survey 362, 330 feet from south and east lines of lease; H. Wendt 12 (122-ac), J. Poitevent Survey 42, 330 feet from west and 990 feet from north line of lease; No. 11, 330 feet from north and west lines of lease. Sun Oil Company, Dallas, L. Wiederkehr 42 (3085-ac), J. Poitevent Survey 359, 660 feet south of No. 40; No. 43, 673 feet south of No. 42. A. H. Richardson, San Antonio, C. O. Drummond Estate 1 (214-ac), R. V. Allison Survey 392, 990 feet from north and 660 feet from west line of lease.

In Falls County the following permit was granted: Dorris & Associates, Perry, C. G. Greater 2 (400-ac), G. Basquez Survey, 3705 feet from west and 904 feet from north line of lease.

In Foard County the following permit was granted: The Texas Company, Electra, L. K. Johnson 4, S. P. RR. Survey 36, Block L, 150 feet from north and 1550 feet from west line of lease.

In Fort Bend County the following permits were granted: Phillips Petroleum Company, Bartlesville, Okla., A. E. Holmes 1 (746-ac), S. Isaacs & W. Andrews Survey, 550 feet from east and 300 feet south line of 400 acre tr. Edwards Drilling Company, Houston, H. Hausler 1 (102-ac), B. Wickson Survey, Block 27, 780 feet from north and 510 feet from east line of lease. Humble Oil & Refining Company, Houston, H. P. Lockwood & A. A.



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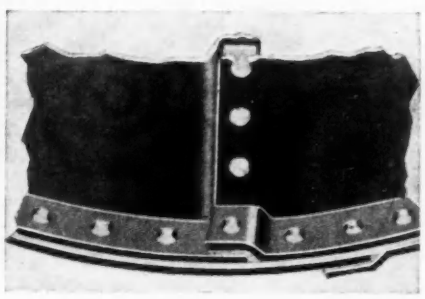

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PACKED IN STEEL-BOUND CRATES FOR EXPORT

Sharp B-27 (938-ac), J. Rabb Survey, 1153 feet west of No. 26; No. 26, 1153 feet west of No. 25.

In Gregg County the following permits were granted: Swaim, Holcomb & Stewart, Austin, Bray 1, Hokit Survey, Block 8, Gladewater, 25 feet from north and west lines of lease. Foster Jones, Tr., Arlington, J. R. Smith 1 (50-ac), Sanchez Survey, 330 feet from north and west lines of lease. Empire Gas & Fuel Company, Bartlesville, Okla., J. T. Jeter 8 (118-ac), D. B. Choate Survey, 822 feet from northeast corner and 75 feet from north line of lease; No. 7, 410 feet from northeast corner and 75 feet from north line of lease; A. Green 8 (67-ac), W. G. Wakeland Survey, 240 feet west of No. 5; O. Lockhart 7 (75-ac), P. W. Warraner Survey, 130 feet from west and 460 feet from south line of lease. L. A. Jeter 14 (121-ac), J. R. Crosby Survey, midway between No. 2 and No. 11; A. A. Lockhart 4 (40-ac), M. Tenison Survey, 330 feet from north and west lines of lease; V. L. Taylor 6 (40-ac), M. Tenison Survey, 161 feet from east and 293 feet from north line of lease. Amended location: L. A. Jeter 13 (121-ac), J. R. Crosby Survey, 330 feet from north and 875 feet from east line of lease. Amended location: Tide Water Oil Company, Houston, B. A. Skipper 1 (50-ac), I. C. Skillern Survey, 330 feet from north and west lines of lease. Gulf Production Company, Houston, R. H. Still 11 (188-ac), J. Wilkinson Survey, 330 feet from east and 1832 feet from north line of lease; R. M. Griffin 11 (65-ac), I. Ruddle Survey, 600 feet west of No. 3. The Texas Company, Shreveport, La., H. T. Elder & Son 18 (86-ac), M. Scott Survey, 310 feet from north and 89 feet from east line of lease. Amada Petroleum Company, Tyler, Magrill 5 (45-ac), D. Sanchez Survey, 330 feet from south and 840 feet from west line of lease. Amended locations: A. J. Green 3 (20-ac), Hooper Survey, 300 feet south of Magnolia No. 1 Green; No. 4, 556 feet north of A. F. O. Co. No. B-4 McKinley. Rancho Oil Company, Ft. Worth, M. J. Fenn 3 (7-ac), D. Ferguson Survey, 308 feet north of R. Callahan No. 2 Fenn. Omega Oil Company, Longview, W. R. Nicholson 3 (25-ac), M. Mann Survey, 350 feet from north and 290 feet from east line of lease. Magnolia Petroleum Company, Dallas, G. W. Tate 6 (67-ac), J. Ruddle Survey, midway between No. 1 and No. 4; L. Walker 3 (22-ac), D. Sanchez Survey, 350 feet west of No. 1. Amended location: Selby Oil & Gas Company and Lewis Production Company, Tulsa, Oklahoma, Snavely Heirs 8-C (118-ac), J. R. Crosby Survey, N½ Block "C", 330 feet from south and 1017 feet from east line of lease. Arkansas Fuel Oil Company, Shreveport, La., W. L. Hestand 6 (36-ac), D. Sanchez Survey, 96 feet west of S. F. Onyette No. 1 Hestand; L. Walker 3 (22-ac), D. Sanchez Survey, 150 feet from north and west lines of lease. Shell Petroleum Corporation, Houston, P. M. Bates 10 (65-ac), M. Van Winkle Survey, 124 feet from north and 140 feet from east line of lease; H. T. Neal 6 (40-ac), M. Van Winkle Survey, 150 feet from east and 124 feet from south line of lease. Sun Oil Company, Dallas, J. N. Campbell 11 (106-ac), G. R. Rains Survey, 125 feet southeast of Gregg Oil Co. No. 2-K T.P. Rt-of-Way. Humble Oil & Refining Company, Houston, T. M. Armstrong 18 (155-ac), J. R. Crosby Survey, 330 feet from south and 1412 feet from west line of lease. Yount-Lee Oil Company, Beaumont, F. K. Lathrop B-4 (63-ac), W. Robinson Survey, 400 feet from north and midway between E&W lines of lease. California Petroleum Corporation of Venezuela, Shreveport, La., J. M. Tuttle 4 (25-ac), W. H. Castleberry Survey, 565 feet north of No. 3. Continental Oil Company, Ft. Worth, A. A. King 3 (35-ac), M. Tenison Survey, midway between No. 1 and No. 2. J. H. Massie et al, Gladewater, J. W. Orr 8 (36-ac), H. H. Edwards Survey, 225 feet north of No. 1. S. P. Shelburne, Kilgore, W. B. Walker 1 (174-ac), L. S. Davis Survey, 65 feet from north and 25 feet from east line of lease.

In Hardin County the following permits were granted: B. G. Dowell, Batson, J. Milhome 101 (4-ac), J. Milhome Survey, 74 feet from east and 15 feet from north line of strip 7 of lease. Ada Belle Oil Company, Batson, Texas Company and W. Weiss Estate 167 (6-ac), F. H. Green Tr. "C", 387 feet from west and 44 feet from south line of lease; No. 168, 88 feet from north and 359 feet from west line of lease; No. 169, Gulf-Knight Survey, 44 feet from south and 316 feet from west line of lease. Rio Bravo Oil Company, Houston, Rio Bravo Fee J-98 (128-ac), C. F. S. Jordit Survey, 150 feet north and 50 feet west of No. 104. Republic Production Company, Houston, E. Arriola Fee 7 (4326-ac), E. Arriola Lg. Survey, 2205 feet from north and 4296 feet from west line of lease.

In Harris County the following permits were granted: Jimmie Hodges Lease & Drilling Company, Houston, W. Scott 1 (125-ac), F. H. Rankin Survey, 200 feet from north and 925 feet from east line of lease. The Texas Company, Houston, W. Hirsch 1 (175-ac), J. House Survey, 466 feet from south and 163 feet from west line of lease. L. H. Puckett, Houston, Mrs. H. V. Berry 1-A (2-ac), W. Scott Labor Survey, 45 feet from south and 35 feet from east line of lease. G. H. McCarthy, Houston, Preston 2 (80-ac), W. M. Jones Survey, 1300 feet from west and 500 feet from south line of lease.

In Howard County the following permit was granted: Permian Pacific Petroleum Company, Ft. Worth, Capps Lucas Ranch 1 (4500-ac), T&P Survey 17, Block 29, 660 feet from southwest and southeast lines of lease.

In Jackson County the following permit was granted: J. T. O'Neil et al, San Antonio, J. R. Davis Fee (LaWard Farms) 1 (40-ac), I&GN Survey 18, Block 93, 660 feet from north and west lines of lease.

In Jones County the following permit was granted: Albany Oil Company, Baker & Pardue, Breckenridge, R. Riddle 1 (160-ac), Fields & Montgomery Ranch Survey, Block 4, 312 feet from north and 936 feet from east line of lease.

In La Salle County the following permit was granted: G. O. Ball, New York City, N. Y., J. M. Martin 1 (485-ac), Survey 683, 330 feet from south and northwest lines of lease.

In Liberty County the following permits were granted: Miramar Corporation, Houston, Phoenix Development Corporation 9 (25-ac), J. Devore Survey, 700 feet from west and 330 feet from south line of lease. Liberty Ind. Oil Company, Dayton, J. M. Neal 1 (150-ac), S. Strong Survey, 1000 feet from north and 564 feet from east line of lease. Sun Oil Company, Beaumont, Carr Joint "A" Fee 5 (68-ac), J. Devore Survey, no location given. Republic Production Company, Houston, Dolbear 151 (800-ac), J. Devore Survey, 200 feet east of No. 35. Yount-Lee Oil Company, Beaumont, Y-L Fee-Hooks 10 (5-ac), J. Devore Survey 50 feet from southeast and northeast lines of lease. W. B. Flynn, Inc., Beaumont, Canter 1 (28-ac), J. Devore Survey, 417 feet from northwest corner and 100 feet from west line of lease.

In Montague County the following permits were granted: Bridwell Oil Company, Wichita Falls, F. H. Begley "A" 2 (90-ac), W. Donoho Survey, 2175 feet from north and 2375 feet from west line of lease; Mrs. S. F. Loy "B" 2 (35-ac), W. Donoho Survey, 330 feet from north and west lines of lease.

In Montgomery County the following permit was granted: Amended location: Houston Oil Company of Texas, Houston, G. Hamman 10 (232-

ac), C. B. Stewart Survey, 467 feet from north and east lines of lease.

In Nueces County the following permit was granted: Petrol Corporation, Houston, V. Bluntzer Estate 1(639-ac), J. V. L. de Herrera Survey, 2200 feet from south and east lines of lease.

In Pecos County the following permits were granted: Mid-Kansas Oil & Gas Company, Tulsa, Okla., I. G. Yates "B" 33 (640-ac), I&GN Survey 61, Block 1, 500 feet from west and 1010 feet from south line of lease. California Company, Midland, Smith 14 (640-ac), GC&SF Survey 35, Block 194, 1351 feet west of No. 7 Yates or Smith. John McCullough, Houston, Goddard 1 (40-ac), GC&S RR. Survey 9, Block 122, 310 feet from south and east lines of lease.

In Polk County the following permits were granted: J. Z. Werby, Longview, L. G. Howard 1 (70-ac), A. Viesca Survey, 466 feet from southwest and southeast lines of lease. Alpha Petroleum Company, Houston, Kirby Lumber Company & West Lumber Company 1 (250-ac), G. S. Thomas Survey, 330 feet from south and east lines of lease.

In Refugio County the following permits were granted: Floboots Corporation, Refugio, F. B. Heard 3 (150-ac), M. J. Ximines Survey, 808 feet east of No. 1. Stanolind Oil & Gas Company, Ft. Worth, J. M. O'Brien "B" B-5 (50-ac), J. H. Peoples Survey, 466 feet from north and 503 feet from east line of lease. Humble Oil & Refining Company, Houston, J. F. B. Heard 3 (500-ac), J. H. Peoples Survey, 1399 feet from south and 466 feet from west line of lease.

In Runnels County, the following permits were granted: Cordova-Union Oil Corporation, Ft. Worth, D. L. Brevard 1 (98-ac), N. Travis Survey, Block 11, 590 feet from west and 150 feet from south line of lease; No. 2, 242 feet from east and 173 feet from south line of lease; T. B. Wade 1 (100-ac), N. Travis Survey, Block 10, 2794 feet from east and 150 feet from south line of lease; No. 2, 2794 feet from east and 810 feet from south line of lease.

In Rusk County the following permits were granted: Magnolia Petroleum Company, Dallas, D. Kelly 6 (55-ac), J. B. de Cadena Survey, 266 feet northeast of No. 5; B. F. Spence 1 (77-ac), L. N. Sparks Survey, 106 feet from northwest and 330 feet from northwest corner of lease. Brown, Oliver & Tide Water Company, Shreveport, La., B. F. Hindman 5 (22-ac), R. W. Smith Survey, 150 feet from south and east line of lease. Boren & Grelling & Champlin & Bass, Tyler, E. L. Pinkston 2 (11-ac), Cadena Survey, 210 feet north of Sanford No. 1 Pinkston. Devonian Oil Company, Overton, R. A. Motley 24 (442-ac), W. Killen Survey, 660 feet from east and 1060 feet from north line of lease. Gant, Garvin & Wegener, Ardmore, Okla., J. E. Strickland 2 (156-ac), Pena Survey, 330 feet from north and east lines of lease; J. W. Harris 1 (172-ac), Pena Survey, 330 feet from north and west lines of lease; L. E. & O. Edwards 1 (50-ac), Pena Survey, 330 feet from south and west lines of lease. Humble Oil & Refining Company, Houston, E. W. Naulls 7 (74-ac), T. J. Martin Survey, 520 feet south of No. 3. R. C. Parks, Dallas, W. H. Fredericks 1 (3-ac), J. Ximines Survey, 150 feet from south and west lines of lease. P. E. Teeling, Waco, W. H. Frederick 1 (2-ac), J. Ximines Survey, center of lease. J. W. Sheehy, Waco, W. H. Frederick 1 (4-ac), J. Ximines Survey, 297 feet from west and midway between north and south lines of lease.

In San Patricio County the following permit was granted: Atkins-O'Neil, San Antonio, J. F. Welder Heirs 1 (3000-ac), J. Hart Gr. Survey, 317 feet from south and north 88 degs. 42 feet west 7904 from southeast corner of gr.

In Shackleford County the following permits were granted: A. O. Walker, Albany, B. S. Walker Estate 3 (80-ac), TE&L Survey 383, 150 feet from southeast and 450 feet from northeast line of S¼ of lease. Whittekin Bros., Albany, W. D. Reynolds, Tr., 1 (70-ac), T&P RR. Survey 25, Block 11, 150 feet from north and 830 feet from west line of lease. Knight & Guinn, Breckendige, B. S. Walker 1 (80-ac), TE&L Survey 381, 685 feet from northeast and 790 feet from southeast line of W¼ of E¼ of lease. Knight & Ewing, Breckenridge, E. A. Jeter 1 (160-ac), T&P Survey 14, Block 11, 1050 feet from north and 150 feet from east line of SW¼ of lease. J. L. Douglas, Tr., Moran, V. Palm 12 (80-ac), BAL Survey 44, 525 feet from north and 520 feet from west line of lease. J. B. Baker, Jr., et al, Wichita Falls, J. H. Nail 1 (1040-ac), E. T. RR. Survey 124, 660 feet from west and 1980 feet from south line of lease. Texas Consolidated Oil Company, Breckenridge, Reynolds 6 (80-ac), T&P Survey 23, Block 11, 177 feet from west and 150 feet from south line of N½ of NW¼ of lease.

In Smith County the following permits were granted: Strickland & Mullins, Henderson, F. Cole 1 (10-ac), E. Daniels Survey, 298 feet from north and 180 feet from east line of lease. Hunt Production Company, Tyler, R. W. Fair "A" 16 (136-ac), McAnulty Survey, 660 feet southeast of No. 6. Joe Sullivan, Tyler, L. Atterbury Hrs. 1 (4-ac), E. Daniel Survey, 320 feet from south and midway between east and west lines of lease. Sun Oil Company, Dallas, J. D. Henson 14 (216-ac), J. Vargas Survey, 546 feet north of No. 8; R. L. Henson 6 (54-ac), J. Vargas Survey, 537 feet north of No. 2; Mrs. A. V. Ritch "B" 6 (54-ac), J. Vargas Survey, 541 feet north of No. 2; J. J. Denton "A" 6 (114-ac), J. Vargas Survey, 534 feet north of No. 3.

In Starr County, the following permit was granted: Amended location: Sun Oil Company, Dallas, M. Guerra & Son "D" 1 (1217-ac), La Sacatosa Survey, 330 feet from northeast and southeast lines of lease.

In Upshur County the following permits were granted: Stroube & Stroube, Corsicana, R. J. Mackay 14 (320-ac), D. Reed Survey, 1270 feet from east and 330 feet from north line of lease; No. 15, 330 feet from north and 1530 feet from west line of lease; No. 13, 330 feet from north and east lines of lease. C. H. Lyons, Shreveport, La., Dunbar 1 (75-ac), J. F. Davidson Survey, 330 feet from south and west lines of lease. Gibson Oil Corporation, Amarillo, W. F. Smith 4 (50-ac), J.M. Pineda Survey, 330 feet from north and west lines of lease. O. C. Fisher &A. F. Dye, Longview, W. Starr 1 (10-ac), C. H. Cooper Survey, 330 feet from south and 156 feet from west line of lease. Magnolia Petroleum Company, Dallas, J. W. Free 20 (169-ac), G. W. Hooper Survey, 385 feet north of No. 19.

In Van Zandt County the following permits were granted: Amended location: Pure Oil Company, Ft. Worth, Harrt Petroleum Company (Swain No. 5) 1 (2-ac), J. Walling Survey, 208 feet from west and 105 feet from south line of lease. W. E. McKinney, Tyler, V. T. Davis 1 (3-ac), N. S. L. & Mund Gross Survey, Block 1, 190 feet from north and 174 feet from west line of lease.

In Ward County the following permits were granted: California Company, Midland, D. B. Durgin 2 (640-ac), H&TC Survey 15, Block 34, 330 feet from east and 2310 feet from south line of lease. Gulf Production Company, Ft. Worth, Hutchings Stk. Ass'n 27 (640-ac), G&MMB&A Survey 4, Block "F", 660 feet south of No. 25.

In Washington County the following permit was granted: Sun Oil Company, Dallas, W. F. Schlottman 4 (86-ac), J. F. Perry Survey. Sg. Lg., 670 feet northwest of No. 3.

In Wichita County the following permits were granted: L. T. Burns & C. B. Long, Wichita Falls, Cline-

Gauntt 20 (220-ac), H&TB RR. Survey, 900 feet from east and 600 feet from north line of lease. A. T. Wolfe, Wichita Falls, F. & A. Daume 4 (45-ac), S. P. RR. Survey, 300 feet west of No. 2. W. W. Ports, Wichita Falls, L. Chilson 1, M. Ramsey Survey, Block 4, 1475 feet from north and 1584 feet from east line of lease.

In Wilbarger County, the following permits were granted: Atlantic Oil Producing Company, Dallas, Lido-Waggoner 16 (299-ac), H&TC Survey 51, Block 2, center of Lot 10 of lease. The Texas Company, Electra, W. T. Waggoner D-9 (320-ac), MEP RR. Survey 43, 933 feet northeast of No. 8. R. H. Cook Oil Company, Electra, Streit 1 (720-ac), H&TC Survey 29, Block 9, northeast corner of lease.

In Williamson County the following permit was granted: Taylor Refining Company et al, Taylor, L. Bachmeyer 2 (38-ac), H. White Survey, 150 feet from west and 750 feet from north line of lease.

In Young County the following permits were granted: Amended location: Cable Oil Company, Wichita Falls, Mrs. S. E. Snider 30 (340-ac), R. Wilson Survey, 300 feet east of well formerly Wise & Jackson. E. H. Remington, Newcastle, G. C. Rochell 1 (100-ac), W. R. Peveler Survey, 450 feet from east and 1450 feet from north line of lease. A. H. & S. P. Schmitt et al, Ft. Worth, H. Haygood 1 (50-ac), TE&L Survey 1466, 300 feet from north and 150 feet from east line of lease. D. L. Wolf, Olney, W. S. White 1 (20-ac), TE&L Survey, Block 258, 190 feet from south and 240 feet from east line of lease.

Receiver Appointed for Small Yates Field Tract

Austin, Texas.—A new angle on the small tract situation in the Yates field developed during the past week.

Joe Mays of San Angelo has been appointed receiver for the four-acre tract which offsets the well owned by M. D. Bryant, on which a hearing was held at Austin recently.

Mays has been instructed by the court to expedite the development of the tract, and trial of the case was set for April 2.

At the hearing held in Austin representatives of the California Company, offsetting the Bryant well to the north, asked for a revision of the rule under which allocations are made. The change they sought may force the drilling of 4000 additional wells in the field.

The development of the tract assigned to Mays would further complicate the problem, as the Railroad Commission has granted two permits for wells there.

Duval County Experiences Active Week

San Antonio, Texas.—Fifteen producers were completed and nearly that number were on the sand and ready for completion during the week in Government Wells field, Duval County. It is one of the most active weeks in months in this district.

The Texas Company and Magnolia Petroleum Company have joined the Sun Oil Company in running several rigs at one time in the proven area, which accounts for the material increase in new production.

The main interest, however, centered around several important wildcats. SRC & Frates' J. R. Foster 5 in the southern portion of Section 206, Eagle Hill field, was deepened from 2147 feet to 2151 feet, but showed salt water and was plugged back four feet. It topped the Government Wells sand at 2115 feet and made a small producer before deepening.

A couple of miles north of the Government Wells field and in the direction of the Eagle Hill field, DeSoto Oil Company abandoned Wood-Welder 3, Section 211, at 2250 feet. The well is in a small pool frequently referred to as Ignacio.

Three wells are drilling on the Government Wells trend to the southwest in the North Kohler sector. Humble Oil & Refining Company W. R. Peters 1-B, Section 15, Kohler ranch subdivision, is in shale at 2725 feet. G. G. Mortimer is moving in rig and laying water line for W. R. Peters 1, Section 176, while Windsor Oil Company is rigging up W. R. Peters 1-B, Section 34.

Bridwell Oil Company's J. D. Sutherland 1, Section 122, which is attempting to establish Government Wells production about seven miles east of that field, is down 1260 feet.

Buffalo-Texas Drilling Syndicate, Inc.'s T. V. de Saenz Escobar 1, San Francisco Survey, in the extreme eastern portion of the county, has resumed drilling after running surface casing.

Continental Oil Company has started its first well in the campaign to be carried on in its huge Clara Driscoll Sevier block. It is well 1-A, Section 448, in the southern part of the Driscoll pool. Rig is being moved in.

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Important Precedent Made In Handling Residue Gas

An order issued by the Texas Railroad Commission Friday for the operation of a gasoline stripping plant in the Agua Dulce field, Nueces County, provides for the most advanced conservation of residue gas ever contemplated by these permits. It establishes a highly important precedent in the handling of residue gas in Texas.

Granted to Garland Clymore, the permit provides that all residue gas not used for light and fuel be returned to the producing sand. This should result in saving nearly 40,000,000 feet per day, as Clymore said at a hearing on the application that he planned to run 45,000,000 feet through the plant. The market for gas from the entire field is less than 3,000,000 feet daily. A suitable allowance is made for operating losses.

Reports must be made on the source and disposition of every foot of gas handled by the plant, which is to be operated under a plan to be approved by the commission. Any violation of the commission order may result in cancellation of the permit on 30 days notice.

Installation of such a plan in the Texas Panhandle would mean the saving of hundreds of millions of feet daily. The plan may be adopted by the commission as a permanent policy.

New Field in Prospect For Bexar County

San Antonio, Texas.—A new field in Bexar County, about eight miles south of the city of San Antonio, was in prospect late in the week as I. L. Dingman and Russell Leasing Company commenced running casing in R. J. Coffey 1 preparatory to completion. The well blew out March 7 and ran wild for about 10 hours before being brought under control. The well is located 966 feet from the southwest line and 1250 feet from the southeast line of the 420-acre lease in the F. Rodriguez survey, County Block 4005, between the Pleasanton and Applewhite roads.

It encountered several oil and gas showings from 500 feet to its present depth of 1030 feet in the Navarro and Taylor series. The Austin chalk was believed to have been encountered at 1017 feet, although this was not definitely determined from the cores.

The well blew out while the drill stem was coming out of the hole, and it was necessary to pump in 35 sacks of Baroid in addition to the heavy mud to control it. The gas flow was estimated at upward of 10,000,000 cubic feet and carried a slight spray of oil.

Considerable drilling has been done in this particular portion of the fault zone, several tests showing very encouraging results in the Edwards lime, although they finally developed sulphur water.

Among the other Bexar County tests, A. M. Blume's Louis Ridder 2, J. M. Barrera Survey No. 58, is drilling in gumbo at 700 feet. E. R. Crosby, Trustee, is washing down E. & T. Ruiz 1, F. Rolen Survey 48, to resume drilling at 1545 feet. Cosby and Flowers' E. B. Carruth 2, F. Rolen survey, has been spudded. Ben M. Burger, Trustee, is moving in for J. F. & F. X. Bilhartz 1, F. Rolen survey. Schelling & Weilbacher have derrick up for Ernst 1, J. Christopher survey. Thomas Gorton et al's E. Jackel 1, J. Ward survey, is drilling around 800 feet. All are in the Von Ormy district.

S. E. Gantt has moved in a new rig on A. B. Stephens 1, P. N. Hays survey, and has resumed drilling. It is 250 feet deep. S. J. Moore is completing Masterson 5, P. L. Buquor survey, at 736 feet. George O'Neill et al's Niemann 1, Juan Montez survey, is drilling at 1230 feet. W. H. Russell 1 of Fred Perrenot is being tested at 1200-32 feet in the Austin chalk, the total depth being 1298 feet. It is in the F. Rodriguez survey.

Fifth Producer on Big Keeran Field Block

San Antonio, Texas.—Gulf Production Company's C. Keeran 5, in the Keeran field, Victoria County, was completed for 35 barrels per hour at 5562-74 feet. It was gauged through a ¼-inch choke and showed a casing pressure of 1500 pounds and a tubing pressure of 750 pounds. The oil is 28 gravity. This is the fifth producer completed by the company on this large block.

C. L. Markle et al's E. L. Dunlap 1 is down about 2000 feet. It is in the R. Manchola Grant, about two miles northwest of the Raisin field.

Jarecki Opens Store At Fairfax, Oklahoma

Jarecki Manufacturing Company put into operation on Monday, March 5, its new store at Fairfax, Oklahoma, center of activity in Osage County. Matt Blar, formerly of the Tulsa office is in charge of the new store. J. R. Nesbitt will act as field man for the Fairfax and Shidler stores. Ben Cash is now store manager at Shidler.

Government Wells Again Leads South Texas

San Antonio, Texas. — Government Wells field again provided the bulk of new production in South Texas with 12 producers completed for a combined initial flow of 5756 barrels per day.

South Texas completions are as follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Bastrop County—		
W. B. Hinton, A. Glass 1, H. Warnell Sur.	*	1909
Humble, J. W. Jackson 1, T. Garretson Sur.	*	2290
Marts & Beavens, Reyes 7, Addison Lytton Sur.	250	1682
Ogden & Reed, Spradlin 2, J. Gray Sur.	375	2285
Duval County—		
Cox & Hamon, State 2, Sec. 60	912	2248
DeSoto Oil & Gas Co., Wood-Welder 3, Sec. 211	*	2250
Humble, C. W. Hahl 34, Sec. 360	1200	2327
Magnolia, Duval Ranch 18, Sec. 208	120	2326
Duval Ranch 19, Sec. 208	144	2324
A. Lundell 7, Sec. 60	192	2260
C. W. Hahl 6-A, Sec. 45	100	2282
Reynosa Oil Co., Duval Ranch 3-D, Sec. 362	768	2300
Sun, L. Weiderkehr 29, Sec. 359	696	2306
L. Weiderkehr 32, Sec. 359	768	2305
L. Weiderkehr 35, Sec. 359	600	2298
Texas Co., H. Wendt 10, Sec. 42	¶5-50	2266
Duval Ranch 7-A, Sec. 206	*	2362
Duval Ranch 5, Sec. 362	216	2307
Kendall County—		
A. P. Pierce et al, W. Werner 1, J. F. Torry Sur.	*	992
Live Oak County—		
H. Coquat et al, Burgess 1, Simmons Sub. Tract 3487	*	2901
McMullen County—		
Armoil Oil Co., Kate Martin 1, HT & B Sur. 9	*	2354
Refugio County—		
Humble, J. F. Welder, McGrew Sur.	*	6474
Nesral Prod. Co., V. E. Heard 1, M. W. Ximenes Sur.	*	6015
Starr County—		
Accumulative Oil & Royalties Co., F. J. Martinez 1, Sec. 217	*	2865
Victoria County—		
Gulf Prod. Co., C. Keeran 5, M. de Leon Grant	840	5574
Webb County—		
Magnolia, E. Benavides 1, Blk. 14, Sec. 697	*	2306

*Failures; †Junked; ¶Million cu. ft. gas.

Increased Wildcat Drilling In South Texas Counties

San Antonio, Texas.—A material increase in drilling activity has been recorded in South Texas. Duval County, with 28 active rigs, is the most active district. Bexar County is second with 21 drilling wells. Several wildcat plays, in heretofore idle counties, are boosting work.

In Caldwell County, Simmons et al has made a location for W. H. Callihan 1, J. R. Miller survey. C. J. Webster Oil and Gas Company is drilling at 2165 feet in C. F. Robertson et al 1, John Neil survey.

Humble Oil & Refining Company tested 1890 feet of salt water in 10 minutes in C. H. Kuester 1, SA&MG Survey No. 7, Block 7, DeWitt County, in a sand at 3765-74 feet, and is now down 3839 feet.

A. F. Barnhill topped Edwards lime at 2408 feet and at 2422 feet was showing nothing in F. A. Pfullman 3, L. Bollinger survey, Guadalupe County.

Chicago Gulf Corporation was still waiting on cement at 5561 feet in G. Drushell 11, F. Rodriguez survey, near Edna, Jackson County. Encino Oil & Gas Company is preparing to spud in T. E. Toney 1, Ramon Musquez survey. John T. O'Neill et al's LaWard Farms 1, I&GN Survey No. 18, Block 93, is drilling below surface casing set at 1000 feet.

French Oil Corporation's J. M. Gutierrez 1, Block 1, Section 142, in Jim Hogg County, is drilling at 1903 feet, while A. J. Majors is down about 500 feet in M. Guerra and Son 1, W. J. Wheeler Survey No. 639.

Rodney DeLange and McBride's C. D. Sevier 1, L. Jaboncillos Grant, in Jim Wells County, is drilling at 2315 feet. C. H. Robertson is drilling at a shallow depth in C. Muil 1, Poitevent Survey No. 205.

W. R. Campbell is attempting a drill stem test at 2570 feet in Ira Coats 1, Carlos Martinez survey, Karnes County. Magnolia Petroleum Company has made location and is preparing to spud in W. T. Scorborough 1, E. Talley survey.

W. E. Waldrip has set 400 feet of 8¼-inch casing in Charles Meckel 1, T. J. Sweeney Survey No. 10, Kendall County. The total depth is 425 feet.

George O. Ball's J. M. Martin 1, Section 683, near Atlee, LaSalle County, is moving in materials.

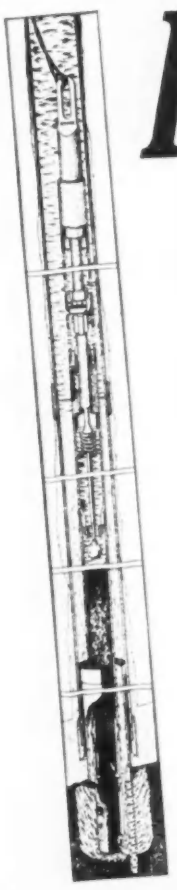
DeLange and McBride's Nelson 1, B. Barba survey, Live Oak County, is drilling at 2200 feet. J. H. Durbin et al's Marbach 2, S. Hays survey, was below 912 feet at last reports. Marine Oil Company's J. B. Dunning 1, M. B. Kiolin survey, in the Mount Lucas area, tested 300 pounds pressure and three joints of mud cut with the oil in 10 minutes at 5226-62 feet and has set casing.

In McMullen County, C. A. Hall et al's H. L. Lark et al 1, E. W. B. Scrugham survey, is drilling at 700 feet. Loma Oil Company is completing its L. Jacob 18-A and 22-A in the W. H. Jacob survey, Jacob pool. Magnolia Petroleum Company is building derrick and moving in machinery for Kincaid 1, near the Nueces River. Rowan and Hope, Inc.'s, E. R. Hagist 1, Section 14, is drilling at 1450 feet. C. C. Shumway, Inc.'s, Shiner Ranch 4, M. Brewer survey, is drilling at 800 feet.

Nueces County has several active wells. Nutex Oil Company's King 1, Section 24, is drilling at 815 feet. Clymore Production Company tested dry at 3238 feet in Ollie Purl 1, Section 7, Lot 4, and is drilling deeper. A. C. Erwin's Kain and Sechrist 1, J. C. Russell survey, block 23, is a new location. Nuco Oil Company has spudded in Vincent Bluntzer 1. Sullivan-Texon Royalty Company's Simmonds and Perry 1 Puentecitas grant, is drilling at 2300 feet. United Production Company is rigging up Ollie Purl 3, Section 6, Block 3, Subdivision 2.

In San Patricio County, Atkins an O'Neill's J. F. Welder 1, Juan Hart survey, has spudded. Beasley and Maxwell have started moving in machinery for Sadley 1, Section 32. C. B. Bunte, Inc.'s, J. D. Holland 1, Lot 26, is moving in materials and rigging up. Plymouth Oil Company's E. H. Welder 1, J. & F. Portillo survey, is coring shale at 4121 feet.

Amdrus and Borah have made location and are rigging up A. Guerra 1, San Jose Grant, Starr County, a 4000-foot test. Great Plains Oil Company's Sanchez 1, Section 344, is still having fishing trouble at 3517 feet. It is showing a heavy gas pressure. Marren, Johnson and Jeffries' Starr County Cattle Company 2, Share 60-5, Block 34, Porcion 88-89, is drilling at 350 feet.



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H. C. Hilhoan Drilling Company's Charles Rogan 1, J. Flores Survey No. 4, is drilling at 500 feet. Myers, Sullivan and Jenkins are washing down at 2516 feet to resume drilling in Starr County Cattle Company 1-A, Block 62, Porcion 89. Sun Oil Company's M. Gerra and Son 5-C, J. A. Guajardo survey, is drilling at 500 feet.

Cole Petroleum Company is waiting on cement after setting casing at 2331 feet in Mrs. R. V. Benavides 83, Block 6, Section 412, Webb County. Don E. Megahan's Gowdy Heirs 1, J. F. James survey, is drilling at 2400 feet.

McLean et al's R. C. Miller 2, B. Manlove survey, three miles east of Liberty in Williamson County, is waiting on cement after setting a string of 5-3/16-inch casing at 2300 feet. Taylor Production Company is preparing to spud in Backmeyer 2, H. White survey. Sarsfield Wilson is washing down to resume drilling in S. Ging 2, the depth being 530 feet.

In Zapata County, Danvers and Harrison's M. Garza Estate 1, Block 102, Comitas Grant, is coring at 1584 feet. O. W. Killam has a sand at 1831-33 feet and is coring deeper in A. M. Bruni 6, Block 53, J. V. Borrego grant. Killam is waiting on cement in R. Hinnant 1, at a total depth of 1532 feet. It has the sand at 1529 feet and has set casing at 1527 feet. The well is in Block 7, Section 10.

Two Serpentine Producers In Bastrop County

San Antonio, Texas.—Two Bastrop County serpentine areas accounted for two new producers during the week. Marts and Beavens completed Reyes 7 in the Addison Lytton survey, Cedar Creek field, at 1682 feet for 250 barrels daily on pump, while Ogden and Reed got a 375-barrel pumper in Spradlin 2, Joshua Gray survey, North Dale field.

Humble Oil & Refining Company's second test on the Elgin prospect failed to materialize and was abandoned at 2290 feet without having shown any serpentine. The well is J. W. Jackson 1, T. Garretson survey, and is about 1550 feet from the last well drilled by Humble on this block.

Charles Anderson topped the Austin chalk at 1600 feet and was at last reports drilling at 1713 feet in Pendergrass 1, Henry Warnell survey, and was rigging up on R. M. Trigg 1, James Stewart survey. Chiquita Oil Company was down only a short distance in A. H. Hanna 1, J. Gray survey. Cole Petroleum Company's Cole 4, R. Gage Survey No. 10, has not spudded. Don Magahan's Charles Holcomb 1, John W. Bunton survey, was last coring below 1500 feet. Ogden et al's Lanfear 1, Standifer survey, was rigged up and ready to spud. Watt L. Saunders, Trustee, shut down A. Harris et al 1, Maximillian survey, block 436, at 980 feet.

Deep Frio County Test May be Plugged Back

San Antonio, Texas.—Amerada Petroleum Corporation's F. Doering 1, wildcat 20 miles southwest of Pearsall, Frio County, has been drilled to 6507 feet, where it is standing. The well topped the Edwards lime at 6442 feet, showed sulphur water in the upper portion, but shortly this disappeared and it was deepened, the formation showing more porosity, but no appreciable amount of oil.

It, however, developed 1600 pounds pressure and a gas volume of 5,000,000 cubic feet at 6144 feet in the Buda lime, topped at 6106 feet. It is possible that the well will be plugged back to this level and finished as a gasser.

In the northern portion of the county and near the Zavalla County line, Humble Oil & Refining Company is drilling below 1200 feet in C. B. Woodward 1, E. Poor Survey.

Hidalgo County Block To Be Tested

San Antonio, Texas.—Union Sulphur Company has made location and is moving in equipment for a series of 5500-foot tests to be drilled on a 30,000-acre block in southeastern Hidalgo County. The first test is American Rio Grande Land and Irrigation Company 1, 400 feet south of the Mile 14 road and 400 feet west of the Hidalgo-Cameron floodway system in Lot 2297, Block 9, North Capisallo District.

A complete geophysical survey has been made of the block by McCollum Exploration Company of Houston.

Chancellor and Hall are drilling Garcia 1, Porcion 42, at 3770 feet in black shale. It is the only well actively drilling in the county.

Deep Test Starting In Bee County

San Antonio, Texas. — Ceaser Oil Company (Guy G. Fisher) has resumed drilling on C. E. Pullin 1-A, F. Lewis survey, after setting a short string of surface casing. It is in Bee County, about 1½ miles southwest of Dash Production Company's Ruhman gasser in the new Burnell field.

In the southern end of the county, Phillips Petroleum Company's E. Welder 1, H. E. Eyles survey, seven miles southeast of Beeville, is moving in materials for a deep test.

Commission Studying Government Wells Area

Austin, Texas.—The Texas Railroad Commission engineering staff has announced that a survey of the operating conditions in the Government Wells area, Duval County, will begin on Monday, March 12.

W. F. Knode, chief petroleum engineer for the commission, who will supervise the survey, stated that data will be taken on bottom-hole pressures, gas-oil ratios and water intrusion. After the information has been compiled a study will be made to determine the most efficient method of operation in the field.

Barbers Hill Well Drills 3246 Feet of Salt

Houston. — Humble Oil & Refining Company's Kirby B-5, in the H. Griffith survey, Barbers Hill, Chambers County, was drilling in shale and lime at 4866 feet after encountering 3246 feet of salt. This is the first well to have drilled that deep in salt. Mills Bennett Production Company's Barber D-1, in the same survey topped the salt at 1362 feet and came out at 3336 feet.

Humble Oil & Refining Company has drilled four wells in this vicinity, their Kirby B-3, 400 feet southeast of No. B-5, is now producing commercial oil.

Oriented Hole Being Drilled at Conroe

Houston, Texas.—On the south flank of the Conroe field, in Montgomery County, Hamil & Smith's 5211-foot dry hole has been plugged back to 2689 feet by the Adeltex Oil Company, and will be oriented to the north with hope of converting it into an oil well.

This well will be known as Adeltex Oil Company's Llewellyn 2, located 466 feet from the north line and 2700 feet from the east line of the R. G. Hamlet survey. It was abandoned as a dry hole at 5211 feet, August 24, 1933, after encountering sand from 5151-57 feet, and sand from 5168-69 feet, both sands carrying shows of oil and gas. With an elevation of 153 feet, this would place the top of the sand eight feet below the accepted water level for the Conroe field proper, or 4990 feet below sea level.

Services of John Eastman have been obtained by the Adeltex Oil Company for the purpose of drilling a slanting hole. A whipstock was set at 2603 feet,

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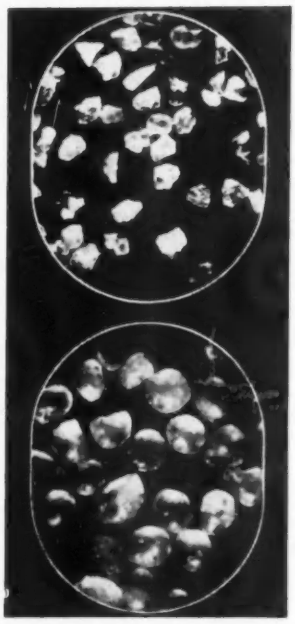

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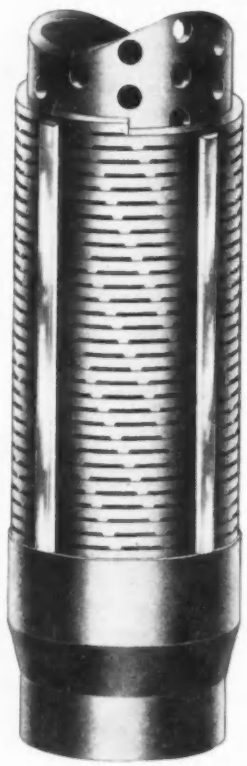

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SEE PAGES 299-306 COMPOSITE CATALOG for a description of several McEvoy products.

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after the hole was reamed to 4304 feet in the sidetracked hole it was oriented three degrees by Eastman. Humble Oil & Refining Company et al used Eastman in drilling the relief well in the crater area of the same field.

The well during the past week was drilling in shale at 3805 feet, and set a whipstock at 3612, 3636, 3659, 3681, 3709 feet.

Manvel Field Extended Westward

Houston.—The Texas Company extended the Manvel field in Brazoria County westward with one of the best producers found in the pool. It is expected to result in extensive drilling in that direction. The well, Scopal 1, in the H. T. & R. R. survey, Lot 25, Section 74, 5385 feet from the south line and 348 feet from east and west lines of a 56-acre lease, made 480 barrels of 25 gravity oil in 24 hours through a quarter-inch choke. It has a tubing pressure of 600 pounds, and a casing pressure of 500 pounds.

Scopal 1 has 40 feet of saturated oil sand from 5127 to 5167 feet, which is a little lower than company's Belcher 6, which produced 37 barrels per hour through a three eighths-inch choke at 5133 feet. Belcher 6, which is the nearest production, is located one-half mile east.

While drilling out the plug and washing, the well blew in and was controlled by a blowout preventer.

A mile and quarter southeast of the Scopal well, Harrison & Abercrombie's M. D. Howe 1, on the Thomas Spoggins survey, Block 18, was coring ahead at 5360 feet.

Austin County Wildcat Abandoned in Salt Water

Houston.—Gem Oil Company's Klump 1, four miles west of Belleville and west of the Raccoon Bend field, J. T. Bostick survey, in Austin County, was abandoned in salt water at 4330 feet. This wildcat held the interest of many operators during the past several weeks. It topped the Hockleyensis at 3050 feet, encountered a water sand at 3220 feet and topped the Cockfield at 3925 feet, where it showed oil from 4112 to 4117 feet, then drilled into the salt water sand where it was abandoned at 4330 feet.

W. J. INGHAM was the speaker at the Houston Geological Society's weekly luncheon March 8, discussing the Wellington oil field, Colorado.

Test Eight Miles East Of Conroe Is Showing

Houston.—Steen Drilling Company's Texas Long Leaf Lumber Company 1, in the Walker School land survey, eight miles east of Conroe field, in Montgomery County, is understood to have encountered an oil sand at 5700 to 5725 feet. This test found the Hockleyensis from 4900 to 4927 feet and was drilling ahead at 5815 feet after having found the Operculina from 5790 to 5805 feet.

Five miles southeast of Steen Drilling Company's well, Hamil & Smith's Foster Lumber Company 1, on the T. Taylor survey, which was considered a normal test after finding the Hockleyensis at 5328 to 5359 feet, with a surface elevation of 113 feet, was abandoned at 6275 feet.

South of the Liberty County discovery well, Gulf Production Company's Kirby C-2, four miles southeast of Cleveland, in the J. Pleasant survey, was coring ahead in shale and lime at 6468 feet with no showing. The well is about 700 feet below the top of the Cockfield, having encountered this formation at 5768 feet.

Northwest of the discovery well, Gulf Production Company's Grogan Manufacturing Company 1, in the Clayton Harper survey, is drilling ahead at 5631 feet. This well, which has an elevation of 141 feet, topped the Hockleyensis at 4780 feet. Operculina was topped at 5600 feet.

Liberty County

East of the Trinity River, south of Davis Hill, in Liberty County, in the J. Knight survey, Wilcox Oil & Gas Company's Cousins 1, is drilling ahead at 4300 feet. It had a showing of oil at 4038 feet.

Southern Liberty Oil Company's Klopper 1, Section 9, Block 4, of the W. C. R.R. survey, in Harris County, topped the Vicksburg at 4495 feet, and was coring in the Warrine at 4725 feet, with a showing of gas from 4391 to 4406 feet and from 4426 to 4431 feet.

Skelly Oil Company's Cobb 1, one and one-half miles north of Van Vleck, in the M. Cummins survey, of Matagorda County, plugged back from 7178 to 7045 feet, to run casing, but upon measurement it was set at 6992 feet, leaving an open section of gas sand. Operators intended to case off this sand in order to get a true test of the saturated distillate sand from 7023 to 7043 feet. Operators intend to set a long wall packer below the casing to shut off the gas. The well will probably be tested over the week end.

Humble Buys Gulf Properties at Tomball

Houston.—Humble Oil & Refining Company has purchased undeveloped holdings of Gulf Production Company in the Tomball field. The property is located on the east flanks of the field. Reported consideration is $150,000 in cash.

Gulf Coast Completions Show Small Decrease

Houston.—A small decrease in the Texas Gulf Coast completions was reported during the past week as compared to the previous week. Amerada-Stanolind Oil Company's Fletcher 2, at Tomball flowed 2232 barrels of oil a day for the biggest producer for the week.

Following is the week's list of completions:

Company, Well and Location	Init. Prod. Bbls.	Depth
Barbers Hill—		
McAlberts Oil Co., Higgins 2	405	5189
Mills Bennett Prod. Co., Means 4	624	4559
Sun, Wilburn 17	682	4249
Conroe—		
Humble, American Natl Bank 3	1800	5130
Keystone Mills 15	1968	5126
Hull—		
Houston Prod. Co., Argain 6	1000	5070
Liberty Hill Oil Co., McAllester et al 3	880	4150
Humble—		
J. D. Clay, Witt 24	*	....
Livingston—		
Gem Oil Co., Davis Holmes 3	1584	4337
Manvel—		
The Texas Co., W. T. Belcher A-7	¶10	5451
S. Scopal 1	553	5167
Mykawa—		
Framer Oil & Gas Co., Minnetex Farms 1	1440	4871
Pierce Junction—		
Rio Bravo Oil Co., Settegast 15	*	4376
Tomball—		
Amerada-Stanolind, Fletcher 2	2232	5576
Otto Rudel 3	150	5582
West Columbia—		
Miramar Corp., Hogg et al 1	*	5276
Wildcats		
Austin County—		
Gem Oil Co., Klump 1	*	4330
Chambers County—		
Smith & Lavender, Sherer 1	*	....
Polk County—		
Dick Schwab, Kirby Lumber Co. 2	¶2	4846

*Failures; †Junked; ¶Million cu. ft. gas.

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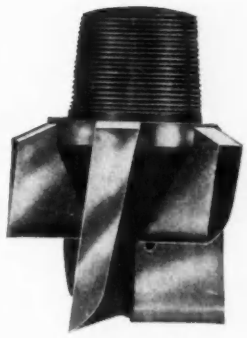

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Coast Wildcats Continue Drilling at Great Depth

Houston, Texas. — Several Texas Gulf Coast wildcats are drilling at great depths. During the coming week there should be some determination as to their possibilities.

Skelly Oil Company's F. G. Cobb 1, four miles northeast of Bay City, M. Cummins Survey, in Matagorda County, was plugged back to 7045 feet from 7178 feet. The test encountered salt water sand at 7102 feet, reamed to 7023 feet and set seven-inch casing at 7024 feet, and was to drill plug during the past week.

Late last week the status of drilling operations in various Gulf Coast wildcats was as follows:

In Austin County, Gem Oil Company's Klump 1, J. T. Bostick survey, was drilling in salt water sand at 4137 feet. Dr. Charles H. Bossevain's C. F. Pfeffer 1, J. W. Kenney survey, was a location. Merry Bros. and Perini's Walter Headge 1, five miles southwest of Sealey, in Lot 1, Block 18, San Felipe de Austin town tract, of Sealy subdivision, was rigging up. R. R. Mitchell's Herman Schilder 1, two miles south of Kenney, John F. Fitzgibbons survey, was shut down at 105 feet. J. N. Tibbett's L. Heidman 1, three miles west of Kenney, Joseph Cooper survey, was shut down at 2080 feet.

In Brazoria County test, Jack Clark Trustee's J. M. Speer 1, six miles south of Manvel, J. F. Pinckney survey, was shut down at 1362 feet. Danciger Oil & Refining Company's W. S. Hunt 3, near Pledger, W. C. Carson survey, was drilling at 2500 feet; W. S. Hunt B-3, same survey, was drilling in sand at 800 feet; while the same company's L. Williams 1, same survey, was shut down at 6875 feet. Harrison & Abercrombie's M. D. Howe 1, two miles east of Manvel, Thomas survey, was drilling in shale and lime at 4483 feet. Shell Petroleum Corporation's Haury 2, on Danbury Dome, H. T. & B. survey, was drilling in shale at 5811 feet. Westlen Petroleum Company's J. J. Settegast 1, two miles southeast of Pearland, W. D. C. Hall survey, was drilling at 5697 feet.

In Brazos County, Harry Elliott et al's W. F. Odem 1, on the Kurten prospect, I. Curd survey, was shut down at 1487 feet. Liner et al's Peters 1, south of Kurten, G. Powell survey, was a derrick. Floyd H. Scott et al's Klintworth 1, one mile northeast of Kurten, and nine miles northeast of Bryan, Isaac Curd survey, was washing to bottom. D. W. Young's T. R. Harrison 1, in the D. Allcorne survey, was a location.

In Chambers County, John H. Carreker's B. Weaver 1, one mile southwest of Moss Bluff, A. Weaver survey, was drilling in gumbo at 390 feet. Smith & Lavender's Sherer 1, F. Ludlow survey, was abandoned.

In Colorado County, Humble Oil & Refining Company's O. M. Powell D-1, in the Garwood district I. & G. N. survey, was drilling in shale at 6153 feet.

In Fort Bend County, Taubert, McKee & Harper's Grigar 1, three miles south of Wallis and five miles northwest of Orchard, J. S. O'Connor survey, was reaming at 4723 feet. H. M. Naylor's S. B. Gehr 3, north of Orchard field, S. Kennedy survey, was a location, while No. 4 in the same survey was also a location. Phillips Oil Company's A. E. Holmes 1, in the S. Isaacs survey, was rigging up. Quintana Petroleum Company's G. L. Wood et al 2, in the Lochridge district, Edward Robertson survey, was drilling in shale at 2510 feet. South Coast Corporation's C. I. MacFarlane 1, Long Point prospect, H. & T. C. Section 102, was bailing 21.7 gravity oil with little salt water at 1003 feet.

In Hardin County, Danciger Oil & Refining Company's Mary Hooks 2, south flank test at Batson, W. Donahue survey, was coring shale and had show of gas at 4494 feet.

Harris County

In Harris County, American Liberty Oil Company's Lewis Clappert 1, near Aldine, W. C. R.R. survey, was coring shale at 3555 feet. Green Bayou Oil Company's P. S. Griffith 1, near Mt. Houston, F. Bell survey, was shut down at 3733 feet. J. A. Hodges et al's Wilda Scott 1, six miles north of Crosby, F. H. Rankin survey, was drilling in shale at 6125 feet. H. H. Givin's W. Hildebrandt 1, R. Giles survey, was shut down at 1032 feet. G. D. Lewis Trustee's Goar 1, 3½ miles west of Webster, Sarah McKissick survey, was drilling gumbo at 6257 feet. McCarthy et al's Preston 1, near La Porte, William Jones survey, was drilling shale at 2088 feet.

In Jefferson County, E. W. Skinner Oil Company's Sealer 1, Block 3, Survey 779, was a location. Lucky Strike Oil Company's J. P. Walker 1, six miles northwest of Beaumont, D. Easley survey, was shut down at 1708 feet. Sun Oil Company's Long 1, 2½ miles southwest of Nome, John Blair survey, was drilling shale at 5916 feet.

Liberty County

In Liberty County, Akin & Denton's B. E. Quinn 1, Corner of Hightower and Sheppard road, was waiting on cement at 907 feet. Brown & Wheeler's P. T. Wright 1, 4½ miles southeast of Cleveland, same survey, was a location. Gulf Production Company's Grogan B-1, northwest of discovery well, C. Harper survey, was drilling at 5550 feet; while the same company's Kirby C-2, four miles southeast of Cleveland, J. Pleasants survey, was drilling in sand and shale with no show at 6468 feet, and Kirby C-3, J. Pleasants survey, was a location. Hamil & Smith's Foster Lumber Company 1, five miles southeast of Cleveland, T. Taylor survey, was drilling shale at 6100 feet. Layton et al's J. A. Lovett 1, southwest of Hull field, P. P. Dever survey, was shut down at 1204 feet. Miramar Corporation's Crowe & Jacobs 1, near Hankamer, H. & T. C. survey, was coring 4381-86 in sand with a showing of oil. Wilcox Oil & Gas Company's Cousins 1, Jas. Knight survey, was drilling with a show of oil and gas at 4075 feet. C. S. Thomas' Eicke 1, two miles east of Kenefick, Reason Green survey, was shut down at 5158 feet.

In Matagorda County Oils Consolidated's Hawkins 2, at Sheppards Mott, D. McCarthy survey, was drilling in shale at 4040 feet. Skelly Oil Company's F. G. Cobb 1, four miles northeast of Bay City, M. Cummins survey, was drilling in salt water sand at 7176 feet. United North & South Development Company's Stoddar Unit 2-6, at Buckeye, J. C. Keller survey, was drilling in shale and lime at 9186 feet, Buckeye Unit No. 4, same survey, Buckeye Unit 32-21, Cotton League survey, and Buckeye Unit No. 58, J. C. Keller survey, were locations.

In Montgomery County, J. W. Baker's Benker 1, two miles west of Conroe, Washington survey, was drilling sidetracked hole at 4510 feet. Clifton Nixon's Foster Lumber Company 1, 12 miles southeast of Conroe, Pryor Bryan survey, was drilling in shale at 6100 feet. Steen Drilling Company's Texas Long Leaf Lumber Company 1, eight miles east of Conroe field, Walker County School land survey, was drilling with show at 5773 feet. Long Leaf Lumber Company 1, William Barker survey, was a location.

In Nacogdoches County, James W.

Rich Trustee's Stripling & Haselwood 1, J. L. Ewing survey, was preparing to drill deeper.

In Orange County, Blue Line Oil Company's Goodwin 1, six miles north of Orange, Richard Ballew survey, was drilling in shale at 825 feet. Texas Louisiana Oil Company's Lutcher-Moore 1, five miles north of Orange, Ben Johnson survey, was shut down at 1608 feet.

In Polk County, D. B. McCall's J. W. Fortner 1, 11 miles northeast of Livingston, George B. Dickes survey, was shut down at 1150 feet. Dick Schwab's Kirby Lumber Company 3, seven miles southeast of Livingston field, was a location.

In San Jacinto County, Piedmont Oil Company's Foster Lumber Company 2, four miles south of Cold Springs, George Taylor survey, was building a road.

In Wharton County, Monarch Petroleum Company's Mary Jane Boon Schebeck 1, 2½ miles northwest of El Campo, in Indianola R.R. survey No. 2, was shut down at 1470 feet. Texas Gulf Producing Company's Lurker 1, 5½ miles east of Louise, E. T. R.R. survey, was plugged back to 3800 feet from 4000 feet. In the new Louise field, Pure Oil Company's operations were as follows: Wallace Houston 1, Section 28, T. W. Heard survey, was preparing to set whipstock at 6457 feet. Stewart 2, Section 25, Morris Cummings survey, was drilling in shale at 2700 feet. Isaac Weaver 1, J. M. Brownson survey, one mile south of Stewart 1, was drilling at 6455 feet. A. J. Wilder 1, Section 28, was fishing at 7614 feet.

Two Producers Added in Louisiana Coast District

Lake Charles, La.—Four completions, two oil wells and two failures, were reported during the past week along the Louisiana Gulf Coast. Shell Petroleum Corporation's A. Ardain 1, located 660 feet north and west of corner, Section 18-9s-6w, Jefferson Davis Parish, Iowa field, flowed 1468 barrels of oil in 24 hours.

The full list of completions follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Lake Barre—		
Texas Co., State Lake Barre 22	*	7162
Leesville—		
Rex Drilling Co., Williams et al 1	*	4638
Iowa—		
Shell, A. Ardain	1468	6952
Vinton—		
Mars-McLeon, Gray 16	12	1872

*Failures; †Junked; ¶Million cu. ft. gas.

Manvel Operators Want One Well to Each 10 Acres

Houston.—Operators of the Manvel field, Brazoria County, in a hearing held here on March 5 before the Texas Railroad Commission, requested that a number of changes be made in the drilling and producing rules governing operations in the pool. The commission will not render any decision until after further study of the testimony.

It was suggested that a change be made in the general rule that governs well spacing in Coastal fields. At present only one well is permitted to each 20 acres and operators desiring a change requested that one well be allowed each 10-acre tract. It was stated that if the general rule was not changed smaller land owners would be at the mercy of larger landowners. The Manvel field has a large number of five and 10-acre tracts, which can easily be drained by wells located close to the property lines.

It was asked that the gas-oil ratio be changed to the figure in use at Conroe, which is 2000 cubic feet per barrel of oil.

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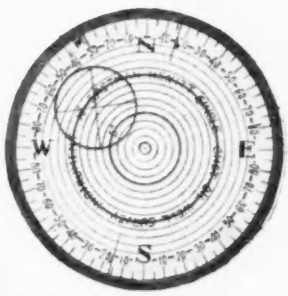

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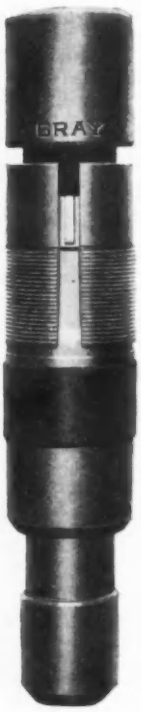

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Deep Louisiana Coast Wildcats Are Interesting

Lake Charles, La.—In Calcasieu Parish, Gulf Refining Company's Sweet Lake Land and Oil Company 1, was drilling in shale at 8809 feet. This test was started October 11, 1933, on geophysical prospect found by seismograph instruments in 1929, and was later checked by torsion balance by Gulf Refining Company and Humble Oil & Refining Company. This is the first well to be drilled on this prospect and is an unusual deep test for this vicinity.

Louisiana Gulf Coast wildcats late last week were drilling as follows:

In Acadia Parish, Mills Bennett Producing Company's Riverside Irrigation Company 1, on the Riverside prospect, northwest of Jennings, Section 61-9s-2e, was drilling in shale at 7602 feet; while the Riverside Irrigation Company 2, in the same district, is a location. I. M. Pharis' Lincoln Bros. 1, six miles northwest of Branch, Section 36-7s-1e, was drilling in shale at 790 feet. Superior Oil Company of California's Hernandez 1, eight miles northwest of Lafayette, Basco prospect, Section 34-8s-3e, was drilling in shale at 7945 feet.

In Beauregard Parish, Humble Oil & Refining Company's Long Bell Lumber Company 1, Section 11-5s-7w, was drilling in sand at 5109 feet.

In Calcasieu Parish, Fred Oil Company's E. Faist et al 1, 2½ miles southeast of Edgewood, Section 26-8s-10w, was drilling in shale at 1985 feet. Union Sulphur Company's Barbee Estate 1, 4½ miles northeast of Lake Charles, Gillis area, Section 1-9s-7w, was drilling in shale at 7627 feet.

In Cameron Parish, Southern Sulphur Corporation's Gulf of Mexico 1, south of Calcasieu Lake, Section 29-15s-10w, was shut down at 2934 feet. The Texas Company's Calcasieu Lake A-10, Calcasieu area, Section 1-14s-9w, was a location.

In Iberia Parish, G. D. Spell's Bernard 1, near New Iberia, Section 54-12s-7e, was shut down at 2850 feet. Gross Tete Development Company's Angello 1, near New Iberia, Section 54-12s-7e, was shut down at 1610 feet.

In Jefferson Davis Parish, Humble Oil & Refining Company's Devilbiss 2, Roanoke prospect, Section 14-9s-4w, was plugged back to 8170 feet from 8190 feet. Shell Petroleum Corporation's Kratzer 1, Roanoke prospect, Section 12-9s-4w, was drilling in shale at 7075 feet. Strake Oil Corporation's Pettigrew et al 1, two miles east of the Iowa field, Section 9-9s-6w, was drilling in shale at 5487 feet. Thad K. Wynn's Aimes Bougeois 1, 1½ miles southwest of Welsh field, Section 28-9s-5w, was a location.

In LaFourche Parish, Barnsdall Oil Company's Harang Plantation 1, La Rose or Valentine prospect, Section 6-17s-7e, was plugged back to 2400 feet from 6608 feet.

In Rapides Parish, J. L. Beck's Hexon & Simmons 1, Section 40-4-1e, was preparing to drill deeper. State Pipe Line Company's R. C. Baum 1, Section 27-6n-2e, was a location.

In St. Bernard Parish, H. W. Robinson's Olevier 1, Olevier prospect, Section 1-14s-14e, was a location. Southern Sulphur Corporation's Lake Lery State 1, Selacreix Island prospect, Section 28-14s-14e, was shut down at 1705 feet; while the same company's State Lake Borgnel, Shell Beach prospect, Section 13s-15e, was also shut down at 1320 feet.

In St. Landry Parish, R. M. Hutchin's Whitman Lumber Company 1, two miles southwest Swayze Lake, Section 15-5s-6e, was drilling in shale at 3424 feet.

In St. Martins Parish, E. B. Hopkins' Standard of Kansas 1, St. Martinsville prospect, Section 83-10s-6e, was plugged back to 6600 feet from 7503 feet.

Rodessa Gas Field Deep Oil Showing Causes Interest

Shreveport, La. — R. W. Norton's French B-1, NW NW Section 33-23n-16w, Caddo Parish, a deep test in the Rodessa gas field that produces a gasoline-saturated gas from the oolitic lime zone of the Glen Rose at 5500-5700 feet, created much interest last week after part of an oil-saturated sand core at 6549 feet was recovered, but the well when bailed showed salt water with only a little oil and is drilling deeper, later last week being below 6590 feet. Six-inch casing had been cemented at 6505 feet.

This test was made in the second red bed series of the upper Trinity. This well is approximately one mile northeast of a test drilled to 6657 feet by Arkansas-Louisiana Pipe Line Company in Winham 1, Section 4-22n-16w, and abandoned as a failure. Some geologists believe Norton's test is on the upthrow side of a fault between his present test and Winham 1.

Norton discovered the Rodessa gas field in August, 1928, after he had assembled an 8000-acre block after geological work was done by D. L. Perkins, Shreveport geologist. Later he sold the block to United Gas Public Service Company, retaining the oil rights and an overriding gas royalty. The present test planned for 8000 feet, if production is not

found above, is his first venture for oil on the block.

Much leasing and oil royalty buying followed the encountering of the oil core at the 6500-foot level, despite the fact that United Gas Public Service Company and Arkansas Natural Gas Corporation own most of the immediate surrounding acreage. Leases totaling a price of $14,265 were filed last week in Shreveport on nearby acreage, and royalty transfers placed on record aggregated $6450. The highest price paid as revealed in the transfers was $5000 paid for 320 acres in Section 16-23-16, by United Gas Public Service Company to Bert Kouns. In the townsite of Rodessa, leases brought over $300 per acre. The Caddo Parish School Board was offered $500 cash for one and one-half acres in the townsite, which is in Section 15-23n-16w.

Status of North Louisiana wildcats changing last week follows:

In Bienville Parish, Hideltha Oil Company's Woodward 1, NW NW Section 26-15n-9w, shut down at 50 feet.

In Bossier Parish, John L. Anderson, Trustee's, Leonard 1, SW SW Section 19-19n-13w, is cleaning out to deepen from 2700 feet. Bossier Oil & Gas Company's B. A. Sherrell 2, NE NE Section 13-19n-12w, shut down at 1810 feet. C. B. Duffield's Werner 1, SW NW Section 11-18n-13w, is coring below 2305 feet. Gulf Refining Company's J. E. Murray et al 1, NW NW Section 30-23n-13w, is drilling below 1000 feet. Howard & Bird are moving in rig for Sam Gold 1, NW NE Section 36-20n-13w. Southern Star Petroleum Company's Ledbetter 1, SE SE Section 6-18n-11w, is coring below 2480 feet. Dr. C. R. Reed et al's Dotys 1, Section 18-16n-11w, which blew out and cratered making gas and salt water at total depth of 3020 feet with drill stem still in the hole, has bridged and operators are trying to recover the drill stem.

In Caddo Parish, Burkett Oil & Gas Company's Lindholm 1, NE SE Section 15-17-14, in the city limits of Shreveport, is drilling below 300 feet. A. D. King, Trustee's, Roach 1, Section 4-14n-16w, is drilling below 1550 feet. Shoreline Oil Corporation's B. G. Dawes 1, NE SW Section 36-22-16, which showed oil and tested dry at 1070 feet, is showing more oil and may be put on the beam.

In Caldwell Parish, Davis et al's Louisiana Central Lumber Company 1, Section 14-11n-3e, is coring below 1600 feet.

In the old Naborton field of DeSoto Parish, which for many years has produced from the Tokio, Bailey Gaunce et al have re-cemented casing in Jenkins 1, Section 35-13n-12w, that showed 13 million feet of gas in the Glen Rose at 3577 feet, and are arranging to test again. The same operators are rigging up Jenkins 2, SW SW Section 35-13n-12w, a west offset. Gaskill et al have recovered bailer and are arranging to bail Jim Guy 1, SE SE Section 3-11n-13w, at 2773 feet. E. T. Oakes' Johnson 1, NE NW Section 30-13-15, is arranging to resume after a brief shutdown at 4885 feet for fuel. D. H. Sebastain, Jr., has shut down at 780 feet in W. H. Hill 1, Section 3-10n-13w. A. F. Tarver's Barnhart 1, SE NE Section 16-15-13, shut down at 3655 feet.

In East Carroll Parish, O. G. Collins is drilling below 2500 feet in John Phillips 1, Section 64-22n-12e.

In Grant Parish, L. L. Lindsay, Jr., is reaming to bottom at 1840 feet in Edenborn 1, SE SE Section 13-7n-4w.

In Morehouse Parish, Zeigen & Bacon's Crossett Lumber Company 1, Section 41-23n-6e, is drilling below 1660 feet.

In Sabine Parish, Bridges Oil Company's Moore 1, Section 5-9n-12w, is drilling below 1445 feet. Foster Estate et al are arranging to mill out of casing in D. E. Stephens 1, SE NW Section 17-9n-11w. Total depth is 3401 feet but it was plugged back some time ago to 3186 feet.

In Union Parish, Ward & Jones' J. D. Miller 1, SW SW Section 16-21n-2e, is drilling below 970 feet.

Prospect of Extending Converse Two Directions

Shreveport, La.—Extension in two directions of the Converse field's producing limits loomed last week. One extension appears certain for the Wolf City sand horizon at 2000 feet and the other is a likely extension of the producing area for the Annona chalk horizon that lies just above the Wolf City sand.

Slightly over two miles south of production in the sand horizon in the Converse townsite in Section 10-9n-13w, and about the same distance east of one well that produces from the sand in Section 20-9n-13w, R. L. Gay, Trustee's, Bowman-Hicks-Cooke 1, reported drilling seven feet into saturated sand at 2063 feet. This test is in SW NE Section 22-9n-13w. Base of Annona chalk was logged at 2031 feet and sandy marl was logged from there to top of the sandy marl. This marl appeared in one test drilled to the Wolf City sand in Section 10-9n-13w.

Foster & Sneed's Jackson 1, Section 9-9n-13w, derrick built; Halliburton et al's Barr 1, Section 15-9n-13w, drilling below 1510 feet; Hall, Burton & Meadows' Burkett 1, Section 9-9n-13w, drilling below 1010 feet; L. D. Higgins' A. J.

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Burkett 1, NE NE Section 16-9n-13w, tested dry at 2000 feet and may use acid, still being in chalk; Helena Oil & Gas Company's A. J. Burkett 1, SE NE Section 16-9n-13w, cemented 6⅝-inch casing at 1755 feet and is using acid at 1999 feet in base of Annona chalk; Brown & Bradley's Logan Oil Company 1, Section 3-9n-13w, recently completed in the Wolf City sand as a small producer to extend production a quarter-mile northeast, has begun to pump salt water without any oil. George Pace's Heard 1, Section 10-9n-13w, a west offset to the first Wolf City sand producer, is drilling below 300 feet; Reese & Martin's Harris 1, Section 10-9n-13w, is preparing to use acid at 1989 feet; W. R. Smith's McWilliams 1, Section 10-9n-13w, will be standardized. A. C. Scott's Burkett 1, Section 10-9n-13w, deepened to sand after being a small producer in the chalk, is showing more oil after air lift was installed. The first air lift to be installed in Converse was put in use in this well.

J. B. Williams of Shreveport has transferred to Walter L. Carss of Houston, Texas, his derrick and 80-acre lease for Tatum 1, Section 32-9n-13w. The new owner will move in rig as soon as weather and roads permit.

Will Try for Extension Of Sligo Field

Shreveport, La.—Attempts to extend the Glen Rose gas producing horizon recently uncovered at 4200 feet in the old Sligo field of Bossier Parish, 1½ miles northeast, will be made in a 4200-foot test, location for which was announced last week by Producers Oil & Gas Company, Incorporated, in W. H. Werner 1, 660 N&W SEC Section 7-17n-11w, Bossier Parish, near Barksdale field, an army airport near Shreveport. This company is headed by Will Hall, who owns several gassers in the Blanchard field of Caddo Parish. The test is on a 2000-acre block.

Three miles northeast of nearest Cotton Valley production, Dorcheat Syndicate and Ohio Oil Company are rigging for A. J. Hodges 1, 330 S&W NEC SE Section 25-22-10e, which will go to the Woodbine, expected to be logged about 3300 feet. This is the fifth test to be drilled on this 5000-acre block, the four preceding tests having been failures.

Calatex Oil & Gas Company of Shreveport has spudded another gas test in the Greenwood field of Caddo Parish, Taylor 2, located 1335 feet south and 1320 feet east NWC Section 11-16n-16w. It is drilling below 1975 feet.

R. G. Newland of Mooringsport, Louisiana, is assembling a block southwest of the Blanchard field in township 19 north, ranges 15 and 16 west.

Sabine and Plaquemines Parishes Lead in Permits

Shreveport, La.—Sabine and Plaquemines Parishes led Louisiana districts in number of new locations reported during the past week. The state total was 24, a high number for a single week.

In Bossier Parish, Gulf Refining Company, Shreveport, will drill J. W. Murray et al 1, 1120 feet east and 1520 feet south of NWc Section 30-23n-13w.

In Cameron Parish, Cameron Meadows Land Company, Humble Oil & Refining Company, and Magnolia Petroleum Company, Houston, Texas, obtained a permit to drill Cameron Meadows Land Company 7, 2495 feet west and 155 feet south of NWc Section 21-14s-13w. Yount Lee Oil Company, Beaumont, Texas, started State School 14, 1070 feet south and 435 feet west of NWc SW Section 15-12s-10w.

In East Carroll Parish, O. G. Collins, Shreveport, will drill John Phillips 1, 1648 feet south and 1320 feet east of NWc Section 64-22n-12e.

In Iberia Parish, Jefferson Lake Oil Company, New Iberia, obtained permits to drill Lake Peigneur 99, 200 feet north and 55 degrees east of well No. 71, and Lake Peigneur 100, 100 feet north and nine degrees and 30 feet east of well No. 21.

In Lafayette Parish, Du-Mar Oil Company, Inc., Lafayette, will drill W. J. Broussard 1, 1000 feet south of forks of Bayou Vermillion and Tertlie, in Section 32-10s-5e.

In LaFourche Parish, Robert Bowles, Houston, Texas, obtained permit to drill Crosby 1, 2424 feet north and 1171 feet east of SWc Section 26-21s-22e. Gulf Refining Company of Louisiana, Houston, Texas, will start Allen Land Company 1, 1147 feet east and 2040 feet south of NWc Section 26-21s-22e.

In Ouachita Parish, Arkansas Louisiana Pipe Line Company, Shreveport, obtained permits to drill Rea Green 6, 549 feet south and 203 feet west of NEc Section 10-18n-4e, and Rea Green 7, 2240 feet south and 1400 feet west of NEc Section 3-18n-4e.

In Plaquemines Parish, Freeport Sulphur Company, New Orleans, obtained permits to drill Cockrell-Moran 23, 1660 feet north and 3515 feet east from Station "Wash" in T. 20s-26e; Crockrell-Moran 24, 1600 feet north and 3455 feet east from Station "Wash" in T. 20s-26e, and Cockrell-Moran 25, 1565 feet north and 3380 feet east from Station "Wash" in T. 20s-26e. Humble Oil & Refining Company, New Orleans, started Cockrell-Moran 18, 1203.4 feet east and 816.6 feet south of Station "Wash" in T. 20s-26e.

In Red River Parish, J. A. Stinson, Jr., et al, Tyler, Texas, will drill LeLong 1, 720 feet north and 205 feet west of SEc Section 25-12n-11w.

In Sabine Parish, Halliburton & Meadows, Duncan, Oklahoma, obtained permits to drill Barr 1, 330 feet north and east of SWc NW NW Section 15-9n-13w, and Burkett 1, 330 feet south and west of NEc SE SW Section 9-9n-13w. Pete Johnson and S. S. Staley, Tyler, Texas, will drill O. D. Dew 1, 330 feet south and west or NEc SE Section 9-9n-13w. Pelican Natural Gas Company, Shreveport, will drill 4-L, 318 feet north and 285 feet west of SEc SW SW Section 29-8n-11w. J. A. Stinson, Jr., et al, Tyler, Texas, will drill Whitney 1, 330 feet south and west of NEc Section 8-9n-13w. Thomason & Holcomb, Shreveport, obtained permit to drill J. M. B. Porter 1, 330 feet south and 231 feet west of NEc SE Section 7-7n-11w.

In Terrebonne Parish, The Texas Company, Shreveport, obtained permits to drill School Board Bay St. Elaine 4, 2024 feet south and 150 feet east of corner of Section 16-22s-18e, and State-Dog Lake 10, approximately 500 feet westerly from State-Dog Lake 1 in Section 6-22s-16e.

Bulk of North Louisiana Completions at Converse

Shreveport, La.—One failure and two pumping wells were completed in the new Wolf City sand lying just under the Annona chalk at the 2000 foot level in the Converse field of Sabine Parish last week.

J. F. Anderson's Paul Estate 1, NE NW NE Section 14-9n-14w, 2¼ miles west of production was abandoned as a dry hole at 2004 feet in Annona chalk.

Nick Babare's Bolton 1, located 572 feet south and 1314 feet west of NEC Section 9-9n-13w, in the Converse townsite, was abandoned as a salt water hole at 2072 feet, with 11 feet of Wolf City sand.

Clyde Bell's A. J. Burkett 1, NW NW Section 10-9n-13w, with 12 feet of sand, is a 25 barrel pumper at 2020 feet. It is a townsite well. J. E. Sedberry's R. D. Morgan 1, NW NW Section 10-9n-13w, a townsite well, is pumping 60 barrels of oil daily from 16 feet of sand at 2003 feet.

Converse had no new locations last week. Altogether, Converse last week had three producers and three failures.

T. J. Johnson's Lynch 1, 330 feet south and west NEC NW SE Section 29-9n-13w, a south offset to a recent half-mile southeast extension of the Annona chalk horizon at Converse is a 20 barrel pumper from Annona chalk at 1992 feet.

Winn & Caviness' G. I. Paul Estate

1, 830 feet north and 45 feet west SEC NW Section 9-9n-13w, was abandoned as a dry hole in Annona chalk, after an oil show at 1918 feet.

Completions last week in North Louisiana follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Sabine Parish (Converse)—		
J. F. Anderson, Paul Estate 1, nw ne 14-9n-14w.....	*	2004
Nick Babare, Bolton 1, ne ne 9-9n-13w	*	2072
Clyde Bell, A. J. Burkett 1, nw nw 10-9n-13w.....	25	2020
T. J. Johnson, Lynch 1, nw se 29-9n-13w	20	1992
J. E. Sedberry, R. D. Morgan 1, nw nw 10-9n-13w...	60	2003
Winn & Caviness, G. I. Paul Estate 1, se nw 9-9n-13w..	*	1918
Sabine Parish (Zwolle)—		
Monroe Prod. Co., Sabine Lbr. Co. 2, sw nw 7-7n-11w	500	2449
L. J. Tillery, Sabine Lbr. Co. 1, 5-7n-11w	*	2475
Cameron Oil Co., G. Martinez 1, sw sw 2-7n-13w...	*	2509

*Failures; †Junked; ¶Million cu. ft. gas.

Woodruff County Test Waiting After Small Show

El Dorado, Ark.—Operators have shut down, waiting orders in John Wadkins' H. D. Rosser 1, SE NE SE Section 7-5n-2w, Woodruff County, Arkansas, after testing salt water at 1733 feet, then striking sand showing oil at 1735 feet. Total depth is 1740 feet. The well is a rank wildcat in the north central part of the state.

Status of other Arkansas wildcats changing last week follows:

In Ashley County, K. R. March et al's E. J. Williams 1, NW SE Section 8-18s-4e, is coring below 2752 feet. This is a 3500-foot test on a 30,000-acre wildcat block.

In Jefferson County, King & Schumacher's Danaher 1, Section 16-5s-9w, is drilling below 1675 feet.

In Miller County, Fitzwater et al's Norsen 1, SE SW Section 20-15-27, is coring below 3150 feet, corrected depth by steel line measurement. Another Miller County test, King Oil Corporation's C. H. Schroder 1, SW NE Section 24-14-28, is drilling below 1115 feet. E. L. Young's R. M. Patterson 1, SE NE Section 5-19-28, his shut down at 3100 feet for fuel.

In Ouachita County, T. P. Lester's Poindexter 1, SW NW Section 35-15-18, has cemented 10-inch surface casing at 103 feet.

In St. Francis County, Field, Jenkins & Jones' Walford 1, NE NE Section 29-4n-1e, is rigged up.

In Union County, E. R. Henderson's J. Vines 1, SW SE Section 29-18-14, which swabbed at the rate of 10 barrels of oil daily in Nacatoch at 2230 feet, is drilling below 2540 feet.

Lone Arkansas Completion Flows 50 Barrels by Heads

El Dorado, Ark.—One completion was reported last week in Arkansas, this being a 50-barrel daily oil producer in the Urbana district, Union County, which is flowing by heads from four feet of sand at 3563 feet.

No new locations were announced but two locations, both in Miller County were abandoned. These are Fred Pederson's Fouke 1, located 150 feet south and west NEC Section 11-17-27, which had spudded to a depth of 105 feet, and Lionel Hawkins et al's E. V. Olivet 1, 450 feet south and 150 feet east NWC NW NE Section 4-16-26.

Completions last week in Arkansas follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Union County (Urbana)—		
Marine Oil Co., W. B. Thompson E-2, ne ne 10-18-13	50	3563

*Failures; †Junked; ¶Million cu. ft. gas.

Mississippi Test "In Trend" To Start by April 15

Jackson, Miss.—Pelican Oil & Gasoline Company (A. C. Glassell et al), is reported to contemplate spudding by April 15 on a 3500-foot test on its 40,000-acre block of wildcat leases "in the trend" and centering in township 3 north, range 17 west, Marion and Lamar Counties, South Mississippi. Under the terms of the leases this company was to do geophysical exploration on the block or start the test by April 15 and it is understood no geophysical work will now be done. The test will go to the Cockfield.

In Greene County, Southeast Mississippi, on a geophysical location, United Gas Public Service Company has installed a heavier rig and is drilling below 3400 feet in Davis 1, NW NW Section 30-1n-5w.

In Franklin County, Otto Morris et al have derrick up for Homochitta 1, NE SE Section 20-5n-2e.

In Pike County, Bodie D. Fenly et al are moving in rig for First State Bank of McComb 1, center Section 28-3n-7e.

In Rankin County, south of the Jackson field, Benedum Trees Oil Company's Ascher 1, NW NW Section 35-4n-1e, is coring for Midway below 3010 feet. Elevation is 395 feet. The company's Southern Mineral Development Corporation 1, Section 35-3n-1e, is drilling gummy chalk at 2740 feet in basal Cane River; elevation is 365 feet.

Newton County Wildcat Is Drilling Ahead

Meridian, Mississippi.—Dalton Oil & Gas Development Company's Majure 2, SE SE Section 25-6n-11e, Newton County, Mississippi, which was reported as dry and abandoned at 3300 feet, is drilling ahead according to Colonel R. E. Dalton, president of the company.

Exploration Contract on Large Alabama Block

Mobile, Ala. — Exploration contracts permitting geological, geophysical, magnetometer, Torsion balance or seismograph work on 25,300 acres of land in Mobile County, Alabama, by United Gas Public Service Company, were filed here recently. The acreage is located in townships 1 and 2 north, ranges 3 and 4 west, and townships 1 and 2 south, ranges 3 and 4 west. Similar contracts are being taken in Washington County, Southwest Alabama, it is reported. The company has had a seismograph crew working for several months on a 300,000-acre block under geophysical option contracts in Southeast Mississippi.

The exploration contracts filed here are for one year and provide that upon finding conditions favorable for a test on any of the tracts or within 15 miles of any of them, a well will be spudded for a 3000-foot test, making a 10-year lease at an annual renewal of 25 cents per acre, should the option provided in the exploration contract be exercised.

Long Beach Most Active Field in California

Los Angeles. — Long Beach is the most active field in the state, with 42 wells actively drilling or redrilling. Six are rigging rotaries to start and six new locations were made the past week.

It is said that close to half of the drilling wells are being diverted to produce from under land other than the lease upon which the well is located.

Long Beach has a new allowable of 55,800 barrels for March, increased from 54,800 barrels in January and February. Long Beach is now credited with a total potential of 102,500 barrels, which is an increase from 98,655 barrels in February. On March 2, production was 64,016 barrels against a low of 47,740 barrels on February 27. It is seriously doubted if the field could make its rated potential over a two week's period, but it probably could in one 24-hour run.

California Wildcats to Resume As Result of Ownership Change

Los Angeles.—Dietzman & Horn's Williams 1 at Summerland in Santa Barbara County, which has been producing 2,500,000 cubic feet of dry gas per day, has been closed in at orders of the oil and gas supervisor as a conservation measure. This well was drilled to 3815 feet and plugged to 3690 feet and is located inland from the old wells drilled in the edge of the ocean. Owners had hopes of developing a deeper oil sand.

Word comes from Bakersfield that Republic Petroleum Company will resume drilling in the old hole known as Jordan 1, Section 24-25-18, near Devil's Den, which had been carried to 4100 feet by Pyramid Hills Oil & Gas Company. Oil and gas showings had been reported by the scouts, prior to suspension of drilling. It is understood the new work will start late in March.

Calizoo Oil Company has been formed with headquarters in Los Angeles to take over the wildcat drilled to 3920 feet by Pacific Development Company in the Athens area. The new company takes over the holdings of the former company and as soon as arrangements can be made, will resume drilling and a total depth of 6000 feet is the plan unless a good oil sand is found at a lesser depth.

Thos. Kelley & Sons' wildcat near Torrance in Los Angeles County is very wet, and work has been suspended. Several stringers of oil sand were cored. Bottom of hole is at 6443 feet and after plugging back to 5775 feet and 6⅝-inch cemented at 5665 feet, hole was swabbed for two days, showing practically all water.

Kern County

In Buena Vista lake area, Ohio Oil Company's K.C.L. 1, Section 31-31-16, is coring in sand and shale at 5750 feet after cementing 11¾-inch at 5652 feet.

At Comanche Point, Comanche Oil Company's No. 1, Section 15-32-29, is drilling in gray sand at 2035 feet.

In Delano district, North American Oil Consolidated's Quinn 1, Section 25-25-27, is a completed rig and is now waiting on water well.

In Edison district, Caravel Petroleum Corporation's No. 1, Section 19-30-30, is idle at 1270 feet and is to be taken over by Petroleum Development Corporation. Monterey Exploration Company's Duff 2, Section 15-30-29, is standing at 2080 feet and production test has been delayed.

At Lost Hills, Associated Oil Company's Williamson 1, Section 2-26-20, is in oil stained sand at 7515 feet and will run formation tester.

Near McKittrick, Shell Oil Company's Midway-Primier 1, Section 21-29-21, is drilling in shale at 2690 feet. Standard Oil Company's No. 45, Section 15-30-22, is building rig.

On the Pioneer anticline, Bankline Oil Company's Orloff 1-A, Section 26-11-24, is a portable outfit to drill a shallow test. Fisher & Wilton's Harris 1, Section 35-15-23, is a location.

In the Shafter district, Shafter Oil Syndicate's No. 1, Section 8-28-25, is drilling in shale at 1750 feet.

At Union Avenue, Alta Oil Company's Newell 1, Section 6-30-28, has plugged to 3847 feet from 6457 feet and will redrill to 4040 feet.

Near Wheeler Ridge, Badger Oil Company's Tejon 1, Section 31-11-19, is circulating oil to loosen drill pipe frozen at 2200 feet, with bottom of hole at 5260 feet.

Kings County

In the Tulare Lake district, all drillers are idle except Tulare Basin Gas Company's No. 2, Section 2-23-19, which is drilling in shale at 900 feet.

San Joaquin County

Near Tracy, Milham Exploration Company's Connolly 1, Section 5-4-5, is coring hard shale at 1870 feet.

Santa Barbara County

In Cuyama Valley, Cuyama Valley Oil Corporation's No. 1, Section 12-10-

Belridge Edge Test in Reach of Setting Depth Record

Los Angeles.—General Petroleum Corporation's Berry 1, edge of the Belridge field, was drilling at 10,392 feet at 7 a.m., March 6, and for several days has been making around 20 feet a day in hard shale. A 20-foot core was taken to 10,389 feet, but it was lost completely, indicating that the formation has changed to something which might be sand. This is the first core they have lost completely in this deep test. For this reason officials are feeling better as to the well's general outlook.

This well is getting deep, but has more than 500 feet to go before equaling the world record for depth hung up by North Kettleman Oil & Gas Company's Lillis-Welsh 1, Kettleman Hills outpost, which had reached a total depth of 10,944 feet before losing the drill pipe. Penn Mex Fuel Company's Jardin 35 in Mexico reached 10,585 feet before it was shut down. Another 200 feet will put the present test deeper than the Mexican well. If the present drilling record is continued, March 26 will see it rapidly approaching the world record for depth. A string of 6⅝-inch was cemented at 9717 feet.

This test found some of the hardest formation ever drilled in California, a kind of glassy shale, so tough that a special diamond studded bit was used, and with this diamond bit, they only made 150 feet in 100 days. The formation was so hard it would cut glass.

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27, is cleaning out to bottom at 3690 feet.

Near Lompoc, Fairview Oil Company's No. 2, Section 18-7-34, is drilling in blue shale at 1990 feet.

York-Smullin Oil Company's Meganos 1, Section 28-8-34, cemented 8⅝-inch at 2312 feet with bottom at 2997 feet and will test. This was taken over from Meganos Oil Company.

Near Santa Maria, Union Oil Company's Rice 1, Section 19-10-33, drilled to 750 feet and has cemented 11¾-inch at 749 feet.

San Luis Obispo County

Near Cholame, Willett Oil Association's Jack 2, Section 10-25-15, is standing at 550 feet and is rebuilding roads.

In Edna district, Dolley Adams' No. 4, Section 31-31-13, is suspended at 858 feet.

In See Canyon, Farrell Petroleum Company's No. 1, Section 18-31-12, is idle at 1115 feet.

Near Temblor Hills, Robt. A. Foster's McKee 1, Section 2-32-22, is a location.

Ventura County

Near Bardsdale, Knieper & Atha's Dryden 1, Section 7-3-19, is idle at 1715 feet.

Near Conejo, American Oil Company's Powell 1, Section 33-2-20, is drilling in sandstone at 2978 feet.

Near Fillmore, Laing & Jacob's Snodgrass 1, Section 32-4-19, is standing cemented at 700 feet.

In Hopper Canyon, Bardeen Petroleum Corporation's Lankershim 3-B, Section 13-4-19, is idle at 900 feet. Oil Ridge Oil Company's Moran 1, Section 1-4-19, is standing at 480 feet (corrected depth) and is hauling in casing.

Near Las Posas, Las Posas Petroleum Corporation's Mahan 1, Section 22-3-20, is fishing for drill pipe with bottom at 6030 feet.

In Ojai district, Garner Oil Royalties Company's Ojai 1, Section 12-4-20, tapped an oil sand at 790 feet and cemented 10-inch at 773 feet. Bottom of hole is at 830 feet. Arthur N. Macrate's Cosmon 1, Section 27-4-23, with bottom at 4975 feet, bailed a little oil and some gas and is now idle until March 15. Midlands Oil Company's Canet 1, Section 9-3-23, is redrilling at 6850 feet with old bottom at 7825 feet.

Near Rincon, Woodrow Petroleum Corporation's Woodrow 1, Section 4-3-24, is idle at 7615 feet.

Near Santa Paula, J. W. Mosher's No. 1, Section 22-4-21, is cleaning out to 1805 feet.

Near Sespe, H. A. Ivers' Ivars 11, Section 1-4-20, has been spudded and is drilling. Marchants Petroleum Company's Cochran 4, Section 1-4-20, is trying to cleanout to bottom at 1280 feet. Topa Topa Oil Company's No. 1, Section 33-5-19, is drilling in brown shale at 2090 feet.

At Simi, Henry A. Dabney's G-1, Section 20-2-18, is idle at 1506 feet. Williamson & Donaker's Simi 1, Section 36-3-18, is idle at 786 feet.

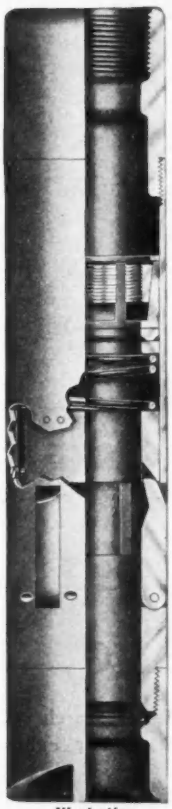
At South Mountain, Driggs Petroleum Company's Shefferle 1, Section 17-3-20, is rebuilding burned rig and installing pumping equipment at 432 feet, plugged depth. This well was flowing oil when it caught fire.

At Sulphur Mountain, Wm. A. Kirk's No. 5, Section 21-4-22, is drilling in brown shale at 1790 feet.

Miscellaneous

In Fresno County, Western Gulf Oil Company's S.P.L. Co. 1, Section 15-17-15, was given a production test at 7880 feet and showed neither oil or gas and will be cored ahead. In the West Coalinga district, Federal Petroleum Company's No. 17, Section 17-19-15, flowed a small amount of 40 gravity oil at 1781 feet. The well is now being bailed and cleaning out. Gravity of oil

Who's Afraid... of the Big Wild Wells?



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was a surprise as the nearest production is heavy. Bergman Oil Company's Ora Farms 1, Section 12-12-11, is coring at 4792 feet and showing some gas. Russ Oil Syndicate's No. 1, Section 28-12-11, is drilling in sandy shale at 3910 feet. Emerich Oil Company's Mason 1, Section 35-13-13, is idle at 4530 feet, corrected depth.

In Monterey County, near San Ardo, Jas. M. Douglas' No. 1, Section 36-22-9, cemented 8¼-inch pipe at 1873 feet, drilled out and is preparing to test.

In Yolo County, Pacific Northern Oil & Gas Company's Guinda 1, Section 23-12-3, is coring at 6635 feet, the core recovery from 6604 feet to bottom being very gassy.

Southern California

In Atwood district, Midrich Drilling Company's Vejar 1, Section 26-3-9, is idle after spudding on February 14.

In Brea Canyon, Eldorado Oil Company's Baird 1, Section 30-2-9, is idle at 2850 feet.

In Carbon Canyon, Tehama Petroleum Corporation's Backs 1, Section 33-2-8, is idle at 1297 feet, corrected depth.

At Hermosa Beach, Corniel Oil Corporation's No. 1, Section 31-3-14, pulled 80 feet of the liner and sidetracked the remainder. Now idle with bottom at 3900 feet.

Near Huntington Beach, on the tidelands, Black Eagle Oil Company's No. 1-A, permit 194, has repaired boilers, reamed to bottom and will core ahead from 3918 feet.

Near Los Nietos, Rex Anglin Development Company's Fallis 1, Section 30-2-11 is idle at 300 feet.

At Newport, Pioneer Drilling Company's Banning 3, Section 29-6-10, is drilling in hard brown shale at 6200 feet.

At North Long Beach, Geo. L. Clayton's Co-operative 1, Section 31-3-12, is drilling in brown shale at 3710 feet.

In Pico district, Frontier iOl Company's No. 1, Section 12-2-12, is a steel rig.

At Placentia, Placentia Development Company's Verde 1, Section 35-3-9, is drilling in hard brown shale at 4370 feet.

Near San Fernando, Alexander & Owens' No. 1, Section 7-2-14, is drilling in sandy shale at 625 feet.

At San Pedro, J. K. Wehrman's No. 1, Section 14-5-14, is drilling in hard sand at 1515 feet.

Near Saugus, Barstow Oil Company's Walker 1, Section 35-5-16, is idle at 2164 feet, and Walker 2 is a location. International Oil Company's Powell 1, Section 34-5-16, has material on ground.

Near Sunset Beach, Superior Oil Company's Alamitos 1, Section 19-5-11, is suspended at 5770 feet.

Near Torrance, Thos. Kelly & Sons' Del Amo 1, Section 7-4-13, is idle at plugged depth of 5775 feet after testing wet on the recementing job. Hole had been drilled to 6443 feet.

The Midfield test at West Whittier continues idle at 2015 feet.

In San Bernardino County, near Chino, Great American Petroleum Company's A-1, Section 18-2-8, is fishing at 2715 feet and B-1 is idle at 2605 feet.

Kettlemen Hills Drilling Is Twice Volume of Year Ago

Los Angeles.—Kettleman Hills is becoming more active, week by week, although it has been several weeks since the field reported a new oil well. A recent survey indicated 32 operations, ranging from grades to drilling wells. Total of 25 wells were drilling, two locations were being graded, three rings were up and two were rigging rotary. This compared with 13 drilling wells at the close of February, 1933.

Twenty-one wells in the field are drilling 6000 feet, seven of which are below 8000 feet. Four completions are possible during March.

Controversy over allowables for this field, and division of the allowable between the various interests, has waxed warm at times. During January and February, the field allowable was 50,050 barrels, but the allowable for March was increased to 54,200 barrels. For February, the potential was set at 358,475 barrels, while the potential for March was cut down to 351,750 barrels, a decrease of 6725 barrels.

The general committee handling allotments has asked operators at Kettleman Hills to get together and decide on a fair division of the field allotment between themselves. This they tried to do. They then decided to select three arbitrators who would make the division. But overnight, two operators backed up on this agreement. Once more the various interests are trying to reach agreement. If they fail, then the committee will have the job back in its lap for determination.

But in spite of such failure to agree, Kettleman Hills is staying very close to its field allowable.

Contract Drilling More Popular in California

Los Angeles.—The drilling of wells by contract has not been the practice in years past in California as has been the custom in the Mid-Continent, but the trend is changing in 1934 and more and more wells are being contracted by the larger companies. Several wells are now drilling in the state on contract and some of the Mid-Continent contractors are paying a visit to the West Coast to check the outlook.

Grover Simpson, representing Laughlin Brothers, Oklahoma drilling contractors, has been in Los Angeles recently and has figured on several contracts. Other contractors have had representatives in California since January 1.

Little & Bell of Los Angeles, contractors who have been active for years, are now drilling two wells at Kettleman Hills for Kettleman North Dome Association, one for Western Gulf Oil Company in Fresno County and two for Standard Oil Company at Coyote.

Taft Well Drilling Company of Bakersfield is drilling one well for Standard Oil Company at Kettleman Hills and two for Western Gulf Oil Company at Fruitvale.

W. O. Todd of Los Angeles is drilling one well for Kettleman North Dome Association.

Four Drillers Contracting Company, Long Beach, is drilling one well for Midland Oil Company in Ventura County and one for Mines Oil Company at Long Beach.

Big Boy Drilling Company of Los Angeles is drilling two wells for Centralia Oil Company at Mountain View.

Thompson & Rae, supply dealers of Long Beach, are in the drilling contracting business, as are O'Kane & Brain, also of Long Beach. The latter company has drilled several wells on contract for Jergins Trust.

M. A. Cox of Long Beach is drilling a well for Mutual Oil Company at Dominguez, on contract.

Scott Brothers of Los Angeles are also in the contract business, and rumors are current that other concerns plan to get into the game.

Huntington and Long Beach Each Report Two Starts

Los Angeles.—Four of the 10 new wells reported in California were for tests to be drilled at Huntington Beach and Long Beach. Other notices are scattered in the northern fields.

The detailed list follows:

Standard Oil Company will drill Huntington Beach 65 and P. E. 21 at Huntington Beach.

At Long Beach, Marine Development

Corporation's Hines 1 and Trinity Oil Corporation's Signal Hill 1 are new holes to start.

Property Service Corporation will drill Dabney-Lloyd 3, Section 24-3-23, at Ventura Avenue.

Barnsdall Oil Company made location for 88-9B at Elwood.

Belridge Oil Company will drill No. 35-27 at Belridge in Section 27-27-20.

Hubro Oil Corporation is to start Noble-Petrol 1-A at Mountain View in Section 30-30-29.

Semaphore Petroleum Corporation will drill Vedder 1 at Mt. Poso in Section 14-27-27.

Sovereign Oil Corporation's San Joaquin 1 is to be drilled at Mountain View in Section 30-30-29.

California Completions Report Small Initial

Los Angeles.—Only three wells with a total initial production of 1380 barrels were completed in California the past week, and only two recompletions were reported, also with small initials.

At Mountain View in Kerr County, Mohawk Petroleum Company redrilled Hood 2 to 5756 feet from 5680 feet for 460 barrels of 26.4 gravity oil. At Long Beach, Cordova Oil Company's No. 2, was redrilled to 3975 feet and is pumping 225 barrels of 25.5 gravity net oil, cut 45 percent.

Standard Oil Company's completion at Huntington Beach was good for 1030 barrels of 23.5 gravity oil. This well is on the strip lease on the bluff overlooking the ocean.

The new completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Huntington Beach—		
Standard Oil Co., P.E. 20	1030	4289
Long Beach—		
Bush Oil Co., Fee 3	300	3940
Richfield Oil Co., Huffman 2	50	4645

*Failures; †Junked; ¶Million cu. ft. gas.

Los Angeles.—Thirteen wells are actively drilling in the Mountain View field, four rigs are up, one foundation is listed in addition to one location, placing this Kern County field high among four or five other areas in the state. Three completions are due the next week or 10 days.

Gilmore Oil Company has entered the field and is to take over the rig erected by Geo. Black in Section 24-30-28, and drilling is expected to start at once. Hogan's Cavanaugh 1, Section 29-30-29, is pulling liner to plug back to 5850 feet for another test. Jergins' Bloemer 1 found the Santa Margarita wet at 5620 feet and will plug back to 5260 feet in the Kern River series for another test.

Overland Dome Wildcat Test Nearing Completion

Casper, Wyo.—Early completion of Earl W. Reader, Inc.'s Union Pacific, important wildcat drilling on the Overland Dome structure, Carbon County, is expected. Operators are making new hole at 4080 feet after landing 6¼-inch production string to 4050 feet following a fishing job for parted casing. Hole is believed to be bottomed in the top of its objective, the Dakota series. The test has had two major shows of light oil in the Wall Creek series, totaling about 200 barrels. The test is 18 miles east and south of Parco, refining town and railhead on the Union Pacific line.

Sidney H. Keoughan is drilling below 640 feet and near the gas horizon in his joint test with the Wyoming Southern Oil Company, Government 1, 500 feet west of the center of Section 27-32n-69w, on the Shawnee structure, Converse County. Gas horizon, in which Phillips Petroleum Company developed 1,500,000 cubic feet in a core hole near the location, is expected within the next 100 feet of drilling. Gas will be utilized for drilling a deep rotary test for oil on the structure. It is located two miles from railhead, Shawnee, on the Chicago & Northwestern.

N. B. Torrey of Twin Falls, Idaho, is reported to have taken over a block of acreage six miles east of Manderson in Big Horn County, and will drill a wildcat test within the next 30 days. The test is to be located on what is considered by some geologists an extension of the Hidden Dome structure. According to Torrey, the drilling will be comparatively shallow with the bit passing through five possible producing sands before reaching a depth of not more than 2200 feet.

Stanolind Oil & Gas Company is geologizing territory northwest of the Sand Draw gas field in Freemont County, preparatory to core drilling to locate axis of structure. The company may, on uncovering favorable geological conditions, drill a wildcat in this area. In the same county, the company is core drilling on the Poison Creek Dome structure, six miles south of Shoshone, in Township 37 north, Range 4 west, where it will later locate a wildcat.

New Mexico Wildcats Report Little Changed

Santa Fe, N. M.—While drilling operations in New Mexico continue quite active with something like 72 tests under way, more than half of them are in proved fields. There were no completions reported in wildcat areas in the week ended March 3 in New Mexico and only one new location.

In De Baca County, Atlantic New Mexico Oil Company has made location for Ingham 1, Section 32-1s-21e. The company has a block of 3000 acres on the structure which has been geologized by half a dozen geologists, including John W. McGee of Amarillo, Irvine E. Stewart of California and others.

Stovall & Mock are shut down waiting for orders in Mock 1, center SE SE Section 29-24-27, Black River district, southern Eddy County, at 2369 feet after a test in which it tested 10 barrels of oil and six barrels of water. Poor showing in this test which was estimated at 100 barrels will probably

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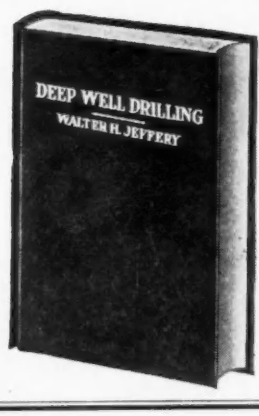


hold up drilling of several other tests scheduled for the same district.

Ralph Spearow interests are having trouble with their two wildcat tests in Eddy County. On the Indian Creek structure, McClelland 1, SW NW NE Section 22-22s-23e, after plugging back from 4865 feet to 4000 feet is trying to bail down water to test a showing of oil. McIntyre 1, NW NW Section 27-23-25, Dark Canyon district, is still trying to straighten hole bottomed at 2812 feet.

Of the score or more remaining wildcat tests under way in the state, there was nothing of importance to report.

Expect Early Revival of Colorado Wildcat Work

Denver, Colo.—Wildcat operations in Colorado continue at a rather low ebb with prospects of considerable new work starting within the next 60 days. Ramsey Petroleum Company of Oklahoma is expected to drill at least one more test in the Buckingham-New Raymer district in Weld County, northeastern Colorado. This is considered as likely territory with geological conditions like in the Mid-Continent rather than the Rocky Mountain region. Several new wildcats are also scheduled for northwestern Colorado by major interests, but their locations have not been announced.

John Milner and associates have completed a rig at a location previously announced in SW SE SE Section 30-18s-69w, in the Florence District in Fremont County. This is in semi-wildcat territory.

Colorado Oil Refining Company (C. Leonard Smith et al) reports a show of oil in shale at 550 feet in North Park Coal Company 1, NW NW Section 18-9n-78w, North McCallum district, in Jackson County. The first objective is expected around 600 feet.

In Park County, the South Park Oil Company's Milligan 1, NE Section 13-8s-76w, Jefferson district, made a bailing test at 3198 feet with a show of oil and 2500 feet of water. It will drill a few feet deeper and make another test.

In Grand County, Interstate Oil & Refining Company's Hinman 1, NE SE NW Section 11-2n-81w, Dirt Creek structure, is bottomed at 1340 feet and underreaming eight-inch at 1200 feet.

In Larimer County, Eastman & Deininger's Cement 1, NE SE NW Section 30-5n-69w, Loveland district, is drilling at 125 feet with an increased showing of gas found at 117 feet.

In Montezuma County, McElmo Oil Company has set casing for water shutoff at 1530 feet and is shut down in West 1, NE NW NE Section 31-36n-17w.

All other tests in wildcat areas in the state at the close of the week under review were shut down.

Liberty County, Montana, Test Has Gas Showing

Great Falls, Mont.—A second show of gas, 1,000,000 cubic feet, was encountered this week in Harold Hayes and others' Strode 1, SE NE Section 3-36n-4e, in the basal Colorado at 1430 feet. It is drilling ahead for the Baskoo sand (Cut Bank) expected, according to revised check with logs of producing wells in the Whitlash field, five miles to the northwest, at around 1600 feet. Test is located on the Strode structure in Liberty County.

Producers Development Syndicate's (L. R. Hannah et al) Freda Peterson 1, NW NW Section 29-32n-4w, wildcat extension test, five miles to the east and a little south of The Texas Company's State 1, successful completion on South Cut Bank, is drilling at 1565 feet. It resumed drilling from 400 feet two weeks ago after having been shut down for three months.

C. Leonard Smith and associates are cleaning out after shot in Mowat 1, SW SW SE Section 7-33n-2e, on North Devon Dome, Toole County. Total depth of hole is at 1680 feet. The test showed for an estimated 25-barrel well in the Sunburst sand between 2310 feet and 2332 feet.

Montana Power Gas Company's S. H. Neill 1, CNE Section 20-33n-5w, located in the semi-wildcat territory, six miles north of The Texas Company's State 1, producing well on the South Cut Bank structure, and three miles south of the company's Simero 1, southernmost producing well in the Cut Bank field, is spudding this week. The test will have an important bearing on whether South Cut Bank is a separate oil pool or a continuation of the Cut Bank field.

On the Three Forks structure in Gallatin County, the Montana Gas & Petroleum Corporation's Adams 1, SE SE SE Section 35-2n-1e, is drilling at 1880 feet.

Cut Bank, Mont.—Drilling operations in the Cut Bank field were uneventful this week with the five near completions as of a week ago making little progress. One new location was released, The Texas Company's Marie Yunck 2, SW SW Section 14-35n-6w. The Texas Company is drilling in Marie Yunck 1, NW SW Section 14-35n-6w, at 2855 feet. R. C. Jefferies et al are cementing 6⅝-inch production string at 2905 feet in Clark 1, CSW NW Section 3-34n-6w. Par Oil Company is plugging off water in Haines 2, SE SE SW Section 2-34n-6w, with hole bottomed at 2827 feet, while R. C. Tarrant is shut down at 2905 feet in Britton 2, SW NW SE Section 14-34n-6w.

Lone Failure Recorded in Mountain States Area

Casper, Wyo.—Mountain States completions dropped to a low ebb for the week ended March 6 with only one, which was a failure.

Colorado

Company, Well and Location	Init. Prod. Bbls.	Depth
Boulder County—		
Consolidated Metals & Smelting Co., Blubaugh 1, cse 20-3n-79w	*	1500

*Failures; †Junked; ¶Million cu. ft. gas.

Rock Springs, Wyo.—The Ohio Oil Company this week released two new locations in the Baxter Basin district, Sweetwater County, southwestern Wyoming. The new locations are: Florence Wilson B-3, CSE SW Section 15-12n-100w, and Florence Wilson B-4, CNE NW Section 23-12n-100w. Drilling will start in the next 60 days.

Medicine Bow, Wyo.—Ohio Oil Company's Hazlett 1, NE NW Section 34-23n-79w, deep test for oil on the Allen Lake gas structure, Carbon County, is coring in the Red Beds at 4015 feet and feeling ahead for the Tensleep sand. If commercial oil production is not encountered in the Tensleep sand, test will be plugged back to the Sundance and saved as a gasser where it showed for around 30,000,000 cubic feet daily.

Six Oil Producers Among 11 Completed in Michigan

Mt. Pleasant, Mich. — Eleven tests were completed in Michigan during the week, six oil wells, one gas well and four failures on scattered outpost tests.

Two wildcat tests drilled in Arenac County southeast of the West Branch (Ogemaw County) play were abandoned as failures in Dundee lime. Lupher Drilling Company's Lockhead-Dudley 1, Mason township, Section 25, was abandoned at 3150 feet and M. L. Smith's Proulx 1, Au Gres township, Section 12, at 3050 feet.

K. B. Montiegel's Raycraft 1, Gratiot County, Pine River township, SE NE NW Section 20, reported top of the Dundee lime at 3367 feet (?) and drilled to 3378 feet where black water was encountered.

The two best oil producers drilled were Mellon & Pollock's Smock 3, Isabella County, Vernon township, Section 26, initialed at 550 barrels and Hirzel-Leland's Roberts 1, same county, Denver township, Section 30, initialed at 215 barrels.

Company, Well and Location	Init. Prod. Bbls.	Depth
Isabella County—		
Mellon-Pollock, Smock 3, Vernon Twp., ne nw ne, sec 26	550	3800
Hirzel-Leland, Roberts 1, Denver Twp., nw se sw, sec 30	215	3665
Pure Oil Co., Gatehouse 1, Broomfield Twp., sw ne, sec 3	¶1	1350
Midland County—		
Theodore Oil Co., Steed 4, Greendale Twp., sw ne sw, sec 9	100	3565
C. W. Teater, Wale 6, Porter Twp., sw ne nw, sec 22	200	3420
Gratiot County—		
K. B. Montiegel, Raycraft 1, Pine River Twp., se ne nw, sec 20	*	3387
Saginaw County—		
Crabon Oil Co., Community Lease 2, Birch Run Twp., nw sw sw, sec 21	5	1537
Arenac County—		
M. L. Smith, Proulx 1, Au Gres Twp., nw sw ne, sec 12	*	3050
Lupher Drilling Co., Lockhead-Dudley 1, Mason Twp., sec 25	*	3150
Oceana County—		
H. C. Nelson, Copenhafer 2, Hart Twp., sw se ne, sec 36	125	1950
St. Clair County—		
Fred Craft, Vincent Heirs 1, for Gratiot Twp., sec 20	*	790

*Failures; †Junked; ¶Million cu. ft. gas.

New Michigan Gasoline Plant Nears Operation

Mt. Pleasant, Mich.—The new gasoline plant in the Chippewa-Greendale oil fields, under construction by O. H. Grimes of Tulsa, Oklahoma, is expected to be ready for operation within 45 days or less.

The plant is equipped with seven 80-horsepower compressors and will be able to handle upwards of 5,000,000 feet of gas daily.

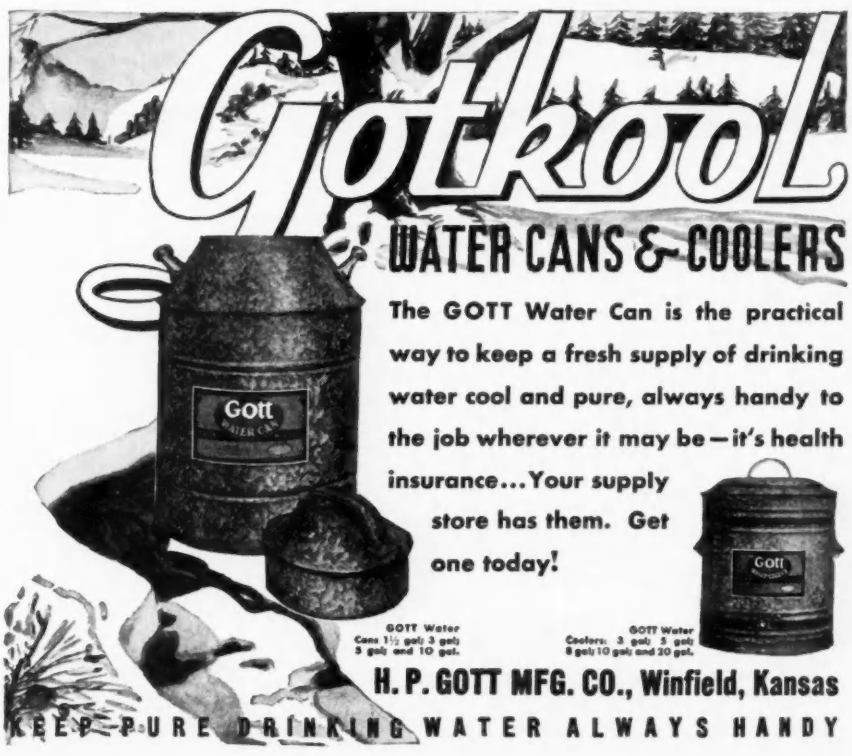
Wells will be equipped with vacuum equipment to maintain steady and even gas pressure for the plant and residue gas will be returned to the wells for power purposes.

Ogemaw Test Looks Like Lower Formation Success

Mt. Pleasant, Mich.—Acid treatment on McClanahan Oil Company's Dundee lime test on Heintz 1, Ogemaw County, Ogemaw township, Section 34, resulted in a 30-barrel initial flow after opening and then the test went dead. While swabbing the hole the swab was dropped so that definite results of the treatment were not available this week.

Heintz 1 showed for an estimated 10 barrels in the Dundee, natural, from 2814 feet, top of lime at 2692 feet. Thus far in the Ogemaw County play no commercial Dundee lime wells have been completed and the Heintz is looked on as the first potential lower formation producer.

Pure Oil Company is feeling its way ahead on Fisk 1, West Branch township, Section 27, with a two-inch hole,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drilling below 2560 feet with a black oil showing from Dundee lime.

C. L. Hess' Fisk Brothers 1, same township, Section 27, which made a light oil show in Dundee lime at 2602 feet is scheduled for acid treatment this week.

Pure Oil Company's Schulty 1, West Branch township, NE NW NE Section 29, topped the Traverse lime at 1739 and reported black water at 1765 feet.

McClanahan Oil Company's Carroll 1, West Branch township, Section 29, is shut down at 2500 feet waiting for five-inch casing and same company's Guliford 1, Section 29, is drilling below 750 feet.

Mt. Pleasant, Mich.—Pure Oil Company will deepen Willie 2, Isabella County, Broomfield township, C SW NE Section 10, from the Michigan stray gas sand to the Dundee lime for an oil test, marking the first test in the established Broomfield gas pool area to be taken to the lower lime formation.

Willie 2 was originally completed at 1351 feet for a 1¼ million foot gas well.

Lupher Drilling Company, contractors on the well, this week started to pull casing (10-inch) preparatory to drilling ahead.

Market, Not Potential, Sets Allocation Rate

Mt. Pleasant, Mich.—E. B. Swanson, chief economist and member of the National Petroleum Administrative Board, Saturday, told members of the Oil and Gas Producers Association and the Michigan Proration Committee that marketing restrictions for crude oil allowables now are being governed by the ability of the producers to sell their products and told the operators they are permitted to sell Michigan crude in any market as long as the posted field price level is maintained.

"The entire purpose of the production control is to stabilize marketing conditions and keep production in balance with consumer demand," Mr. Swanson declared. "If Michigan can enter the competitive field and sell its oil, maintaining the posted price levels, the government will recognize its appeal for an increased allowable.

"There is no reason why Michigan cannot have its allowable raised if it can show legitimate contracts for a 'continuing' supply. In Washington we have paid no attention to the potential flow held in reserve. The question is: 'How much can you market and still maintain the price level.'

"That holds true for export shipments as well as domestic markets. If Michigan can prove to any purchaser that he should use Michigan crude rather than oil, let us say from East Texas, and at a price that will not break the market structure, then that is a condition that will have to be recognized in an appeal for increased allowable."

Swanson pointed out that Michigan has not been able to sell all of its present allowable but will be given an opportunity to make up the underruns during March, before a new set of federal allowables is posted.

Michigan operators have been seeking a higher federal allocation for the past three months on the grounds of potential ratio to allowable and the ratio of allowable to Michigan's market for oil products.

Mt. Pleasant, Mich.—The state conservation department plans construction of the tallest fire tower in Michigan, in the Porter oil field as an added protection against oil properties from seasonal brush and forest fires.

Michigan Committee Raises Production Allowable Rate

Mt. Pleasant, Mich.—Proration on Michigan production was raised from two to five percent of the potential by the state proration committee March 3, effective for a 15-day period. Lifting of the stringent orders of February resulted from a slight decrease in the state potential, a 300-barrel daily increase in the allocation and making up of several under-run balances last month.

The state's potential for March shows a drop of approximately 3600 barrels daily falling from 119,346 in February to 115,673 as of March 1.

After a trial of the five percent proration, the committee will decide whether it must be raised or lowered to come within the 29,300-barrel allocation for March.

Potentials by pools for the first three months of the year are as follows:

Pool—	January Potential	January No. Wells	February Potential	February No. Wells	March Potential	March No. Wells
Porter	91,479	108	106,392	130	103,594	139
Yost	1,686	9	1,746	10	1,690	10
Chippewa-Greendale	5,310	317	5,407	319	4,834	321
Vernon	3,588	36	3,265	38	3,118	41
Leaton	893	19	834	19	778	21
Muskegon	507	179	517	183	486	179
Oceana	575	12	450	113	521	14
Ogemaw	840	4	518	4	483	5
Saginaw	138	136	137	136	134	124
Montcalm	108	1	77	1	32	1
Cass	3	1	3	1	3	1
Total	105,127	822	119,346	854	115,673	856

Nine New Operations Authorized in Michigan

Mt. Pleasant, Mich. — Nine permits to drill were issued in Michigan for the week, all for tests in the proven Porter township, Midland County district. Seven of the nine permits were issued to Pure Oil Company.

Locations to drill also were made in three other areas as follows: Del Fortney et al's McNutt-Keeler 1, Isabella County, Nottawa township, Section 7; and E. S. Hammond's Ferrill 1, Mecosta County, Austin township, Section 7; and E. S. Hammond's Wesche 1, Isabella County, Denver township, Section 20.

The permits, all Midland County, Porter township, follow:

Pure Oil Company's Hoyt B2, SW SE NW Section 21; Hoyt B3, SE SE NW Section 21; Neitzke 5, NW SE NE Section 21; Neitzke 6, SE SE NE Section 21; Neitzke 7, NE SE NE Section 21; Mates 5, NW NE SE Section 22; Wyant 5, NE SW SW Section 16.

Fred Stork's Brew 2, SE NE SE Section 20.

Dokenva Gas Corporation's Finch 1, NE SW SE Section 21.

Michigan Wildcat Has Prospect After 10 Years

Mt. Pleasant, Mich.—Newaygo Prospecting Company's Grass Lake Ranch 1, a wildcat test drilling in Newaygo County at intermittent intervals since 1925, showed oil and gas at 3368 feet from Dundee lime and will be further tested as soon as the hole can be reamed out to seat the five-inch casing.

Attempts to seat the casing for a water shutoff failed at about 500 feet above bottom where the pipe stuck.

The test has an elevation of 1060 feet and the Marshall top was 1195 feet.

With its drilling operations extended over a period of nearly 10 years, the Newaygo County test has been virtually lost sight of by most operators in the field. It was originally started by Ichenberg Brothers and in 1929 was taken over by the Newaygo Prospecting Company for completion, although the two brothers still have a major interest in the development.

When initially spudded in the drilling equipment was mostly homemade by the two Ichenberg brothers and resembled in many respects the equipment on the old Drake well in Pennsylvania. Part of the equipment was made from an old threshing machine and the two brothers handled the early drilling themselves.

There are no commercial wells in Newaygo County. However, following the opening of the Muskegon pool to the west and later the Central Michigan fields to the east, Newaygo County came in for a heavy wildcat play. The Ichenberg test was one started even before the Muskegon oil field boom in 1928-29.

Gordon Oil Company's Greene 1, Midland County, Jasper township, Section 13, west extension test of the Porter pool, topped Dundee lime at 3395 feet, (cable measure) and will test the formation this week.

S. S. Bankle's Farnsworth 1, same township, Section 15, shut down at 3440 feet, probably will test the Dundee within 10 days.

Other active Midland County wildcat tests include Lawson Oil & Gas Company's Atkinson 1, Lincoln township, Section 26, drilling below 970 feet; Sun Oil Company's Piegols 1, Larkin township, Section 9, driving pipe at 373 feet; and Melvin and Brehm's James-Whitaker 1, Geneva township, Section 19, rigging up.

In Isabella County, W. J. Bernier's Duncan 1, Vernon township, Section 9, is drilling below 2200 feet; J. E. Harding's Todd 1, Broomfield township, Section 7, is drilling below 950 feet; G. W. Olson's Fritz 1, Broomfield township, Section 14, driving pipe; Wittmer Oil & Gas Company's Mogg 1, Isabella township, Section 12, drilling below 1470 feet.

Vester Leonard's Shepler 1, Gratiot County, Pine River township, Section 26, is drilling ahead of 2675 feet.

In Mecosta County, Taggart Brothers' Darrah 5, Austin township, Section 5, is attempting to drill ahead of 1300 feet following a shooting job that damaged the casing and left tools in the hole.

Daily Oil Company's Christensen 2, Montcalm County, Home township, Section 10, is shut down at 400 feet and will attempt to finish driving pipe to base of drift with 10-inch. First 400 feet put in was 14-inch and it could not be driven beyond that point.

Sun Oil Company's Flemming 1, Osceloa County, Evart township, Section 5, is drilling below 3480 feet and probably will test the Dundee the last of the week or next.

J. L. Strachen's Moss 1, Ionia County, North Plains township, Section 19, is drilling below 600 feet.

Will Use Rotary on Isabella County Test

Mt. Pleasant, Mich.—Rotary drilling equipment will be used by Lupher Drilling Company to drill Pure Oil Company's Skerrit 1, Isabella County, Broomfield township, Section 5, to the top of the Michigan stray gas sand, approximately 1400 feet. Using rotary equipment in the Michigan fields is comparatively new but in the past year it has worked out successfully in areas having considerable drift where driving long strings of pipe is both slow and costly.

Two tests have been drilled to the gas sand in Mecosta County, by Eddie Self, drilling contractor, with rotary equipment, and Atha Drilling Company, has used the method with success on several tests.

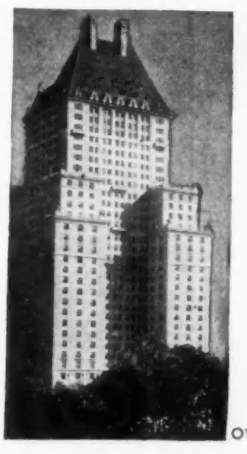
Eastern Completions Have Low Initial Production

Cleveland, Ohio.—No outstanding completions were reported during the week in Eastern States. West Virginia and Ohio had the bulk of completions. The full completion list follows:

Pennsylvania

Company, Well and Location	Init. Prod. Bbls.	Depth
Washington County—		
Manufacturers Light & Heat Co., Miles 1	30	2973
Carnegie Natural Gas Co., Murphy 1	*	3152
West Virginia		
Calhoun County—		
W. H. Bickel, Barr 1	¶	1866
Cabell County—		
Martin & Swanson, Humphrey 1	¶	2839
Boone County—		
Pond Fork Oil & Gas Co., Crane-Cole 18	¶	1475
Roane County—		
Roy L. McCully & Co., Young 1	¶3-5	2000
Frank Finley & Co., Smith 1.	*	1783
Ritchie County—		
Four Point Gas Co., Johnson 1	¶	1940
Tyler County—		
J. H. Holmes & Co., Wells 1.	*	1651
Central Ohio		
Medina County—		
E. R. Edson Sons Co., Miller 41	10	477
Southeastern Ohio		
Jefferson County—		
Altamont Oil Co., Southwest Traction Co. 2	5	1550
Northwestern Ohio		
Hancock County—		
Newton Oil Co., Montgomery 11	30	1380
Shelby County—		
Henry Ernst, Ernst 2	5	....
Wood County—		
Pember & Raydure, Wagner 1	*	....
Wyandot County—		
Wyandot Oil Co., Reister 1...	*	....

*Failures; †Junked; ¶Million cu. ft. gas.



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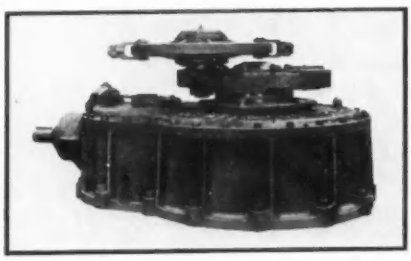
Geared Power

OIL WELL SUPPLY COMPANY

Oil Well Supply Company, Dallas, Texas, has supplemented its line of oilbath geared powers with the new Imperial No. 150-SC, a ruggedly constructed single crank, dual-stroke unit for the most severe central station pumping service. It is of the stationary-spindle design and offers all the features of that design, such as: minimum height of pull-rod connections above the foundation, compact construction, perfect bearing alignment and high mechanical efficiency.



Imperial No. 150-SC

The Imperial No. 150-SC is similar in construction to the Imperial No. 80-SC oilbath geared power, but is built for heavier loads. It is rated 150 horsepower at 20 strokes per minute for oil field service which is a very conservative rating since its industrial capacity (Lewis formula) is 510 horsepower at 20 strokes per minute.

The double-reduction gears are of the single helical type, accurately cut and properly heat-treated to provide the best wear characteristics and maximum strength. The main gear and crank revolve as a unit around the stationary spindle on heavy-duty tapered roller bearings. The stationary spindle, which is an accurately machined sturdy steel casting, is pressed into a large hub in the strong semi-steel base of the power. The construction is such that the spindle is in effect an integral part of the base. The high-speed and intermediate shafts are also mounted on heavy-duty tapered roller bearings and the crank pin is provided with two similar bearings for the pull-rod disc.

The base and cover form an oiltight and weatherproof enclosure for the gears and most of the bearings. Positive and ample lubrication of these parts is assured by the foolproof oilbath lubricating system. The crank-pin bearings and the upper spindle bearings are enclosed in sealed compartments and are lubricated with transmission grease.

The Imperial No. 150-SC is equipped with a single dual-stroke crank, an exclusive Oilwell feature. It has two crank-pin holes and the crank pin is placed in one for a 30-inch stroke and in the other for a 36-inch stroke. The pull-rod disc can be furnished with either sixteen 2½-inch or twenty 2-inch clevis-pin holes. Each hole is provided with a replaceable hardened steel bushing and the clevis pins are drilled for Alemite lubrication.

The overall reduction, 21.6 : 1, is a very satisfactory ratio for such a large power from the standpoints of both proper gear design and the application of various types of prime movers. The Imperial No. 150-SC can be driven by a gas, gasoline or oil engine (horizontal or multi-cylinder type) or by an electric motor. It is offered as an efficient and dependable unit for central power installations within the limits of its capacity and is especially recommended for leases where the well loads are particularly heavy.

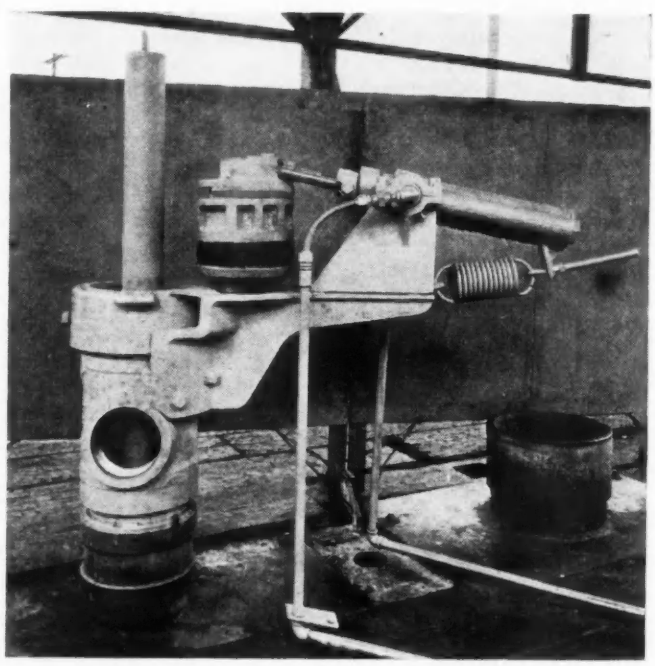
Blowout Preventer Inserter

J. H. McEVOY & COMPANY

A newly designed blowout preventer inserter is being offered to the trade by J. H. McEvoy & Company, Houston, Texas. This inserter, known as type "C", places the packing member in place with a thrust forward received from a hydraulic or steam operated gun.

Speed, ease of operation and safety to the drilling crews are features of the gun type inserter. All control elements are placed on the derrick floor within easy reach of the driller. When the four-way control valve is given a quarter turn, the gun piston clamps the packing member around the drill pipe. The drill pipe is lowered, carrying the packing member into the bowl of the casing head and effecting a positive seal.

The cylinder gun assembly is attached to the main body, leaving the lip ring free to be adjusted as desired. The packing assembly is the standard automatic locking dog type. These locking dogs engage under the lip ring when



McEvoy Preventer Inserter

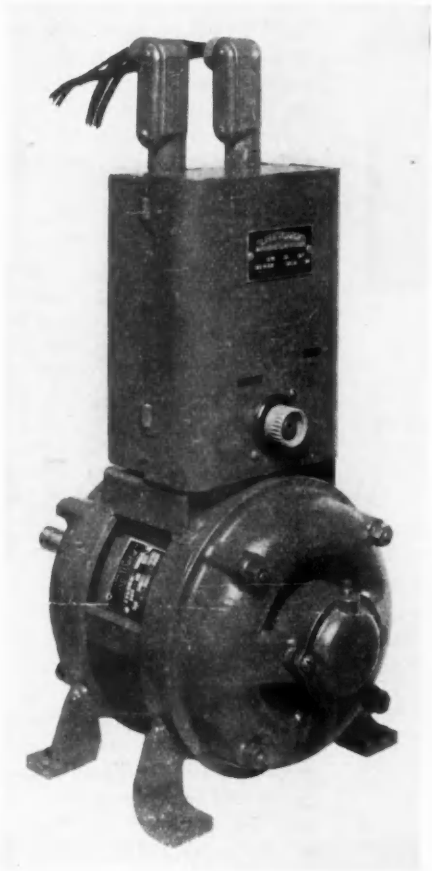
the assembly is forced into the body by lowering the inner pipe. The taper on the bottom of the assembly matching with the taper on the lip ring enables the assembly to be easily forced into the head, even if the inner pipe is as far off center as possible.

This improved inserter does not obsolete the equipment already in use as it is easy to convert any manual type of blowout preventer of either McEvoy Safety Pressure head or McEvoy Hosmer types into a positive and effective mechanically operated inserter type.

Electric Motor

LINCOLN ELECTRIC COMPANY

Lincoln Electric Company, Cleveland, Ohio, has developed a self-protected motor which the manufacturer claims cannot burn out. This new type motor has a protective device built into its windings. Should the motor be stalled through overloading, become too hot, run on single phase, or become blocked for any other reason, the protector shuts off the current and the motor is saved from damage.



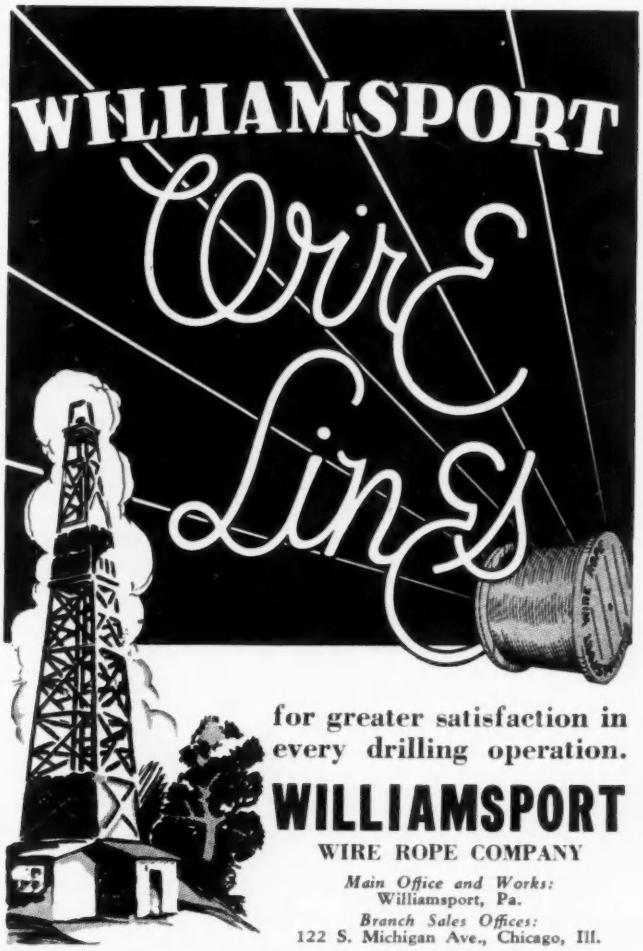
New Lincoln Motor

At high peak loads the protector will automatically disconnect the motor. This makes it possible to use smaller motors where larger motors have been employed to take care of infrequent peak loads. A. C. induction self-protected motors of this type are built in sizes from ½ to 30 horsepower, for either two or three phase and standard commercial cycles and voltages. Controls are mounted on the motors.

Circuit Breakers

GENERAL ELECTRIC COMPANY

General Electric Company, Schenectady, New York, has issued Bulletin GEA-704D, which describes Types FK-232 and FKR-232 Indoor Oil Circuit Breakers manufactured by the company. Construction and operating mechanism are shown.



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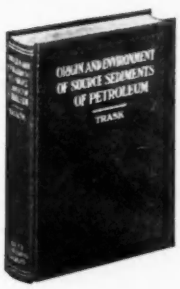

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By **PARKER D. TRASK** *and* **C. C. WU**

This book, recently off the press of the Gulf Publishing Company at Houston, embodies the results of five years research on the part of scientists assigned to this study by the American Petroleum Institute in carrying on the work made possible by the John D. Rockefeller gift of a quarter of a million dollars to be spent in fundamental research.

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NEWS *from the Industry's* EQUIPMENT MAKERS

Gray Appointed Representative Of Petroleum Equipment

The Gray Tool Company, of Houston, Texas, has become associated with the Petroleum Equipment Company, and the Oil Field Engineering Corporation, of Fort Worth, Texas, as representatives in the Gulf Coast and South Texas districts. Complete warehouse stocks will be maintained at Houston, with active field representation.

Lee Carter, formerly of S. M. Jones Sucker Rod Company, has joined the organization of Gray Tool Company as field representative in connection with the distribution of these products.

Merco Nordstrom Valve Company Announce New District

Merco Nordstrom Valve Company of Pittsburgh, Pennsylvania, subsidiary of the Pittsburgh Equitable Meter Company, has established a new district to serve the territory of central and western New York state. C. F. Thomas, who has been acting as New York state representative for a number of years, will be district manager in charge of the new territory, assisted by D. A. Gardner, who has also represented the company in the past in various sections of the country.

An office will be opened at some point in this territory in the near future—the exact location to be announced as soon as negotiations have been completed.

Tom B. Douglas Joins Crump Agency

Tom B. Douglas has resigned as advertising manager of the Dewey Portland Cement, Kansas City, Missouri, to join the Murrel Crump Advertising Company as manager of its Kansas City office. The Crump Agency also maintains offices in San Antonio, Texas.

Wilson Supply Opening Lake Charles Store

Wallace D. Wilson, president of Wilson Supply Company, Houston, has announced that work has started on its new Lake Charles, Louisiana, branch store. The building, of brick construction, will be 100 by 120 feet. "It will be completed and open for business in about 30 days," Mr. Wilson said. "We will carry a complete line of supplies in this store and thus be able to offer our customers in Louisiana better and speedier service."

ENRIGUE O. CHAPA

Union Wire Rope Names Representative in Mexico

Union Wire Rope Corporation has announced appointment of Enrique O. Chapa as sales representative in the Republic of Mexico.

Chapa has been identified with the oil industry since 1921, first with the El Aguila Oil Company, and later with the Mexican Gulf Company, both at Tampico. He is a native of Matamoros, Tamps. His headquarters will be at Washington 111 Oriente, Monterrey, Nuevo Leon, Mexico.

Old Timers Especially Invited to Tulsa Show

Tulsa.—Honor will be paid the veterans of the oil industry when the International Petroleum Exposition and Congress convenes here May 12 to 19.

A medal will be given to the oldest living oil man to attend the exposition and he will be designated as the "Grand Old Man of the Petroleum Industry."

Much interest has been found in the meeting of the "old timers" in previous shows and they have come from practically every state in the union and several foreign countries.

A club house has been fitted up for them. It is in the form of a replica of the Drake well.

"Without these pioneers; men who had faith in the future of the oil industry and men who had the courage to give their 'all' for it, the great industry which grew from the barter stage of 1860 to a twelve billion dollar industry today, would not be," said William G. Skelly, president of the exposition.

Invitations have been extended to every old time driller, tool dresser or person otherwise connected with the early days of the industry to attend the exposition.

Safety Exhibit and Contests Planned for Houston Show

Houston.—The extensive program being prepared on safety work for presentation at the Oil Equipment and Engineering Exposition which will be held in the Convention Hall here April 16-21, is rapidly being whipped into shape. This work will be performed under the direction of E. D. Bullard Company and by advice recently received from this company it will be even more complete than first planned.

The program will cover three major features of safety work. The first is the display of safety and first aid equipment that is applicable to the petroleum industry. The second is the handling, during the exposition, of all the first aid cases which may occur. The third is the nightly presentation of a short program of first aid, traffic safety and other "safety" demonstrations which will be both practical and of a character to appeal to the general public.

The safety equipment will be furnished by the E. D. Bullard Company. H. C. Weigley of Houston, states that, in regard to the activities of his company during the oil show "we will also cooperate with the Harris County Emergency Corps in providing first aid supplies to take care of actual emergencies which may arise during the course of the exposition. Trained men will be available for this purpose at all times."

The assistance and cooperation of two ambulance companies will also be available for demonstration work. In regard to the nightly safety programs, the following organizations will actively participate: Houston Police Department; Houston Fire Department; Houston Gas & Fuel Company and the Harris County Emergency Corps.

Plans are being made for a first aid contest among teams from the various oil companies, the Houston Gas & Fuel Company and others. These events are more than contests; they are highly educational in character and are interesting to visitors, especially from the oil fields, as well as to the contestants.

Squeaks *from the* BULL WHEEL

Three allied soldiers—a Scotchman, an Englishman and an Irishman—were on patrol in No-Man's Land during the World War. They came upon a bunch of German soldiers asleep.

"Let's take them prisoners," suggested the Scotchman.

"No, we'll kill them," suggested the Englishman.

"Hell, no!" said the Irishman. "Let's wake them up and have a fight."

Alice: "So your engagement is broken?"

Lou: "Yes, dearie. You know I could not marry a huckster, so when I heard he had a corner on the market I was through."

"I'd like to be cremated but I'm sure my wife wouldn't like it."

"Why so?"

"Oh, she's always complaining about me leaving my ashes around."

What does a billiard ball do when it stops rolling?

I'll give up; what does it do?

Oh, it just looks round.

"What's the noise?"

"John, the barber, is shaving himself."

"What's the conversation?"

"He's trying to persuade himself to have a shampoo."

"Was your son's college course a complete one?"

"I believe not. I understand a half-mile track was his limit."

During prom week-end, Dean——— of the Medical School was rudely awakened by the ringing of his telephone. It was about three in the morning; it must be an important call. Dr. ——— asked drowsily: "What is it?"

The voice said: "Dean we need your help over at our house. We're having a party and Frater Jones has us all worried."

"Well, why call me? Is he seeing elephants and snakes and things?"

"No, Dr.———, that's why we called. The room is full of them and he can't see any."

Plumber (arriving late): "How is it?"

Happy Husband: "Not so bad. While we were waiting for you to arrive, I taught my wife how to swim."

"I can tell a lady by the way she dresses. Can't you?"

"I never watched a lady dress."

Cannibal: "We've just captured an actor."

Chief: "Hurry! I was hoping for a good ham sandwich!"

"I have just obtained a position as a stenographer for a Well Street bachelor."

"Wonderful, dearie. That's a false step in the right direction."

"See here," said the Indian inspector, "it is a violation of the law now to have more than on wife, and the law must be obeyed. When you get back home you tell all of your wives, except one, that they can no longer look upon you as their husband."

"You tell 'em," suggested the Indian after a moment's reflection.

Mr. X was a prominent member of the Elks. At the breakfast table the other morning he was relating to his wife an incident that occurred at the lodge the previous night.

The president offered a silk hat to the brother who could stand up and truthfully say that during his married life he had never kissed any other woman but his own wife.

"And, would you believe it, Mary—not a one stood up."

"George," his wife said, "why didn't you stand up?"

"Well," he replied, "I was going to, but I knew I look like hell in a silk hat."

"The difference between the cow and the milkman," said the would-be witty consumer, "is that the cow gives pure milk."

"There is another difference," retorted the milkman. "The cow doesn't give credit."

"Look here," said one of the jurymen, after they had retired, "if I understand aright, the plaintiff doesn't ask damages for blighted affections or anything of that sort, but only wants his presents back."

"That is so," agreed the foreman.

"Well, then, I vote we don't give him a cent," said the other hastily. "If all the fun he had with that girl didn't cover the amount they cost him, it was his own fault. I courted that girl once myself!"

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. . . and you'll get $20.00 cash if yours shows the oldest, $10.00 for the second oldest, and $5.00 for the third oldest.

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1 Mail picture of oldest flowing well hook-up you have, whether a high pressure Christmas-tree or an antiquated two or three-piece manifold.

2 List name of field, name of company completing well, and year completed, in blanks below.

3 Pictures are to be addressed to A. J. Penick, president, Oil Center Tool Company, Houston, Texas, and must be received by May 10th. All pictures may be published by us, but will be returned to sender, upon request. Three winning pictures will be published, with names of prize winners, in the first issue of this publication following close of contest.

4 Wallace Davis, our advertising agent, and Merchants Photo Service, commercial photographers, will judge the merits of these pictures, and their decision will be accepted as final.

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Year Completed_____

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(Your Name)

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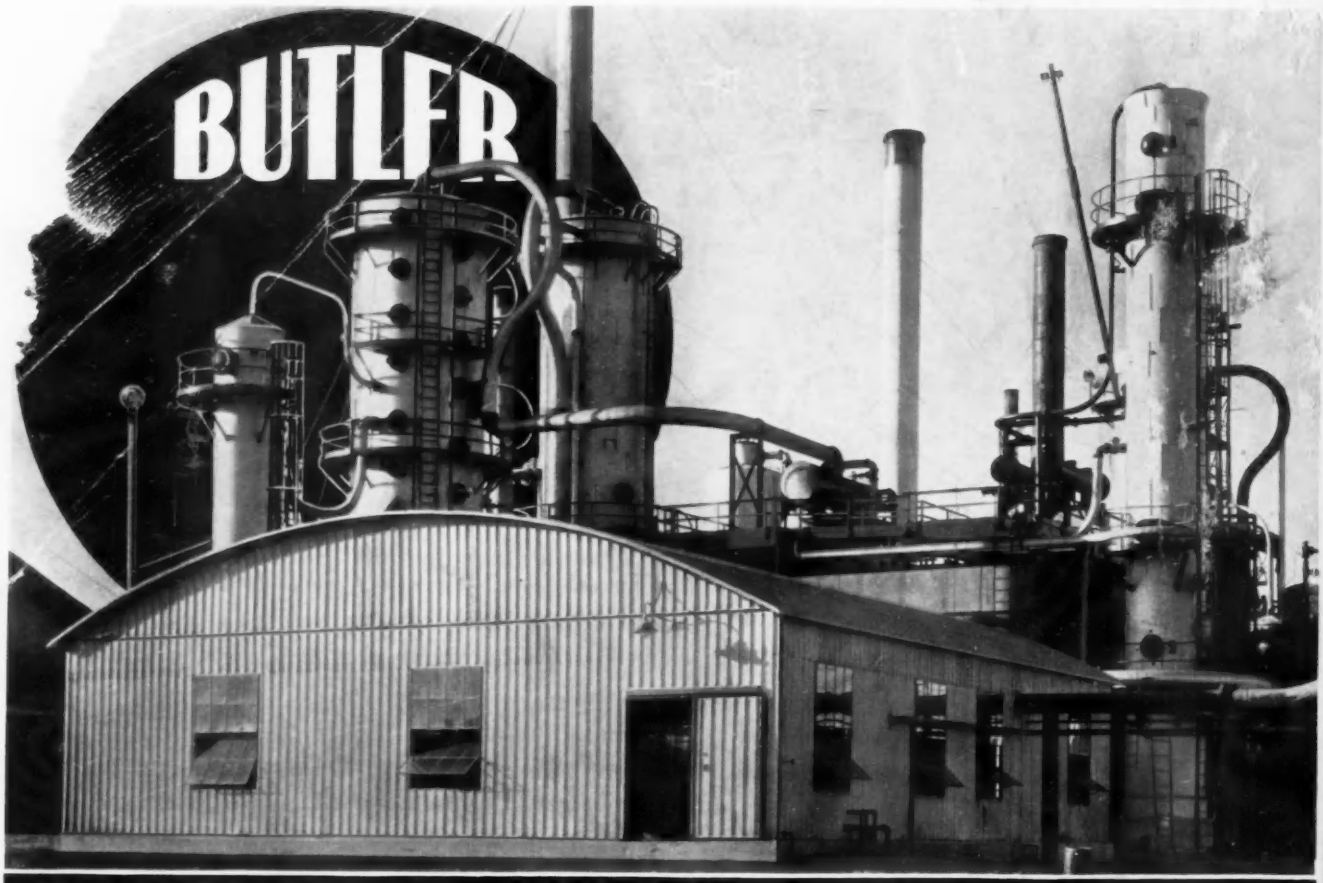

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